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VOL. XV.

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ORNITHOLOGY.

HUMMING BIRDS. PART 2nd.

BY THE EDITOR.

EDINBURGH:
W. H. LIZARS, 3, ST. JAMES' SQUARE;
S. HIGHLEY, 32, FLEET STREET, LONDON; AND
W. CURRY, JUN. AND CO., DUBLIN.
1843.

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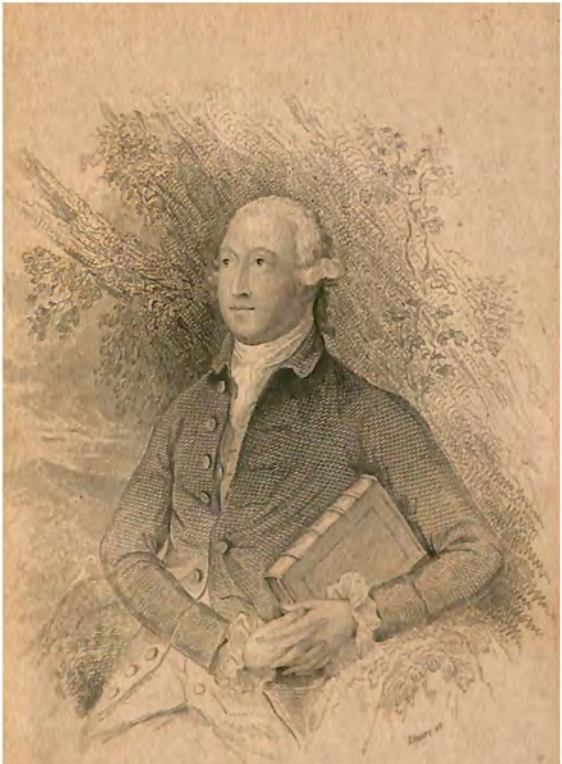

PENNANT

Tho. Pennant

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NATURALIST'S LIBRARY.

ORNITHOLOGY.

VOL. II.

EDINBURGH:
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THE

NATURAL HISTORY

OF

HUMMING-BIRDS.

ILLUSTRATED BY THIRTY-ONE PLATES, COLOURED;
WITH MEMOIR AND PORTRAIT OF PENNANT.

MTb 29 160

BY

SIR WILLIAM JARDINE BART.
F. R. S. E., F. L. S., &c. &c.

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1833.

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ADVERTISEMENT.

In the original Prospectus of the NATURALIST'S LIBRARY, the plan and use of the work were detailed nearly as follows:—

"With the view of enabling all classes to procure information regarding the *Great Works of Creation*, at a moderate price, in a convenient shape, and in the most accurate manner, the Proprietors of the *Naturalist's Library* have embarked in this undertaking. It will be their especial aim to make the history of the objects described, not only interesting and intelligible to the general reader, but of practical utility to the student and scientific naturalist, by means of numerous plates carefully coloured, and scientific descriptions embracing the most interesting facts and anecdotes respecting the habits of the objects represented."

Since this announcement was made, the projectors have received the most substantial proofs that their labours have met the approbation of the public, by

the encouragement they continue to receive from all quarters; and it shall be their especial aim to keep up the interest already excited by particular attention to the work in all its departments.

They are happy in being enabled to promise volumes on Entomology and Ichthyology, to appear at an early date, by JAMES WILSON, Esq. F. R. S. E., WILLIAM MACGILLIVRAY, Esq. M. W. S., Conservator of the Museum of the Royal College of Surgeons of Edinburgh, the Rev. WILLIAM DUNBAR of Applegarth, and the Rev. JAMES DUNCAN, M. W. S., which volumes cannot fail to be highly interesting, from the well known talents of these gentlemen.

The next volume will contain the natural history of the FELINÆ, or LIONS, TIGERS, &c. illustrated by figures, mostly from original drawings, possessing very great interest and beauty of form and colour. A Portrait and Memoir of CUVIER will accompany the volume.

For a more detailed notice of the plan of this LIBRARY, we have to refer the reader to the Advertisement in the first volume of the Humming-Birds, at the beginning.

Note.—The scientific names only are engraved upon the Plates, but the English names will always

be found at the beginning of the letter-press descriptions.

Duplicate Titles are given, in order that the two volumes on the Natural History of Humming-Birds may be bound up as a separate work.

EDINBURGH, *November* 1833.

MEMOIR OF PENNANT.

THE remote ancestry of Pennant were of very ancient Welsh descent, one branch tracing their line from Tudor Trevor and the Great Madoc, while another, according to the English heralds, descended from Richard Plantagenet, Duke of York. The name was not, however, assumed till a much later period, the first who received it being DAVID PENNANT AP TUDOR, a fifteenth descendant. The designation is truly Welsh, derived from PEN, *a head*, and NANT, *a dingle*, in which situation the ancient family mansion is situated.

It is not necessary here to enter minutely into the ancient history of this family. The immediate ancestors, respectable though perhaps not very rich, were a lower branch of the Family of Hugh Pennant of Bychton, whose youngest son married the heiress of the property he farmed, and thus became possessed of the lands and mansion of Downing or Eden Owain, which were afterwards bequeathed to the father of our naturalist, and became his birth-place, estate, and residence. Some others of his forefathers rose to consi-

derable rank in the army, fought in foreign and civil wars, and in the latter had sometimes the misfortune to be opposed to each other. His great-great-grandfather was an officer in the garrison of Denbigh when it was besieged and taken by General Mytton (the same relation on his mother's side), and suffered a long imprisonment. His granduncle, Major Hugh Pennant, was a faithful officer in the royal army, served in North Wales, and particularly distinguished himself in the Isle of Anglesea. His grandfather served with renown at the siege of Brussels; and his father, a plain and worthy man, lived and dressed after the true manner of the old English gentleman — was brave, courteous, hospitable, and honourable. He married the third daughter of Richard Mytton, Esq. of Halston, the representative of an ancient family.

The ancient seat of the family was Bychton, a house built before 1572. Before the death of his father, Pennant resided at this mansion; but he afterwards removed to Downing, which, as we have previously mentioned, was bequeathed to the family, and, being a better house, was afterwards retained as the principal residence. Downing was built in 1600, and in form had a receding front, the two sides advancing in the form of wings. On the front is the motto, "*Heb Dduw, heb ddim, a Duw a digon.*" (Without God there is nothing, with God enough). Being in a state of disrepair, many alterations were made upon it; but it contained several rooms accord-

ing with the taste of its possessor—a large hall—a library, 30 feet by 18, enriched with a considerable collection—and a smoking-room, "most antiquely furnished with ancient carvings, and the horns of all the European beasts of chase." The pleasure-grounds had also fallen into a state of waste—the wood had been allowed to close up around the house, and a public path ran nearly in front; but as the ground was naturally capable of much picturesque improvement, its owner speedily set about the display of its beauties; and the discovery of a rich mine of lead enabled him to pursue his wishes to the utmost, which, when completed, must have embraced scenes of great and varied beauty. "I soon laid open the natural beauties of the place," he observes, in his History of Downing, "and, by the friendly exchange Sir Roger Mostyn made with me, enlarged the fine scenery of the broken grounds, the woods, and the command of water. The walks in the new grounds, the fields, and the deep and darksome dingles, are at least three miles in extent, and the dingle not ill united with the open grounds by a subterraneous passage under the turnpike-road." These were his retreats when weary with the performance of the duties of an active magistrate, or when relaxation was needed after more severe literary studies; and he enjoyed the laying out of his pleasure-grounds, and the management of his woods, while he at the same time improved his knowledge

of the various natural productions of his country, which were thus often presented before him.

Having thus slightly sketched the ancestry and abode of this great Welsh naturalist, we shall endeavour to trace his career in life, and particularly as it is connected with the many and voluminous works which he finished, and which, to the present time, bear a high rank in their particular department of the literature of our country.

THOMAS PENNANT was born at Downing on the 14th June 1726; and, as he himself tells us, to prevent all disputes regarding that event, "in the room called the Yellow Room; that the celebrated Mrs Clayton of Shrewsbury ushered me into the world, and delivered me to Miss Jenny Parry of Merton, who, to her dying day, never failed telling me, 'Ah, you rogue! I remember you when you had not a shirt on your back *."'

In those days, it was customary for the children of the higher ranks to be nursed from home, and there was generally considerable competition in the selection of a nurse. The offspring of persons holding a station in society, as the foster-brother or sister, was generally looked upon as a dependant of the family, who, in their turn, thought it incumbent upon them to do what lay in their power for their support and prosperity in after life. Accordingly,

* Hist. of Whiteford and Holywell, p. 2.

our young naturalist was sent to a neighbouring farm-house, and a nurse, whose maiden name had been Pennant, was selected; who, with her husband, were proud of the honour, and laid aside their own name to adopt that of their charge.

We are not in possession of many incidents in the early life of Pennant, or indeed with any part of it unconnected with his literary labours. The life of a person devoted to the acquirement of knowledge does not leave place for romantic incident; and where the works have been very voluminous, a review of their contents is almost the best history of the ideas and feelings of their author. Before the death of his father, he resided principally at Bychton, but was at this time possessed of little income to follow what had been his favourite and earliest pursuit. He tells us, "that a present of the Ornithology of Francis Willoughby, made to me when I was about twelve years of age, by my kinsman the late John Salisbury, Esq. first gave me a taste for that study, and incidentally a love for that of natural history in general, which I have since pursued with my constitutional ardour."

At a very early period of his life he seems to have enjoyed excursions, or, as he termed them, "*Tours*," to the different places of consequence in the vicinity of his residence. His first was from Oxford to Cornwall, when about the age of twenty, which shewed him the valuable mining districts of that country, and turned his attention to the study of

geology and mineralogy. A few years after, he took a more extensive range to Ireland; but here ("such was the conviviality of the country") his journal was never fit to be offered to the public. His literary works, at this time, were confined to papers written occasionally for the learned societies; the first of which, on account of an earthquake felt at Downing, was published without his knowledge. Several others appear at times in the Philosophical Transactions, on geological subjects, and the description of fossil remains. It was for one of these that he was elected a *member* of the Royal Society of Upsal, upon the recommendation of Linnæus. This he ever considered a very high compliment. "In February 1757, I received the first and greatest of my literary honours. I value myself the more on its being conferred on me at the instance of Linnæus himself. He spoke of my works in terms too favourable for me to repeat."

The study required for the composition of these papers, and an extensive correspondence with men who were ardent admirers of his own pursuits, suggested the publication of some larger work. His attention was turned to the writings of his predecessors upon the productions of his own country, and he imagined that some of its rarities yet remained to be described. He also saw that other nations were busily employed in studying whatever could be turned to use in their domestic economy; and in reference to the works which these thoughts imme-

diately suggested, he thus expresses himself: "At a time when the study of natural history seems to revive in Europe, and the pens of several illustrious foreigners have been employed in enumerating the productions of their respective countries, we are unwilling that our own island should remain insensible to its particular advantages. We are desirous of diverting the astonishment of our countrymen at the gifts of nature bestowed on other kingdoms, to a contemplation of those with which (at least with equal bounty) she has enriched our own. Why, then, should we neglect inquiring into the various benefits that result from the wisdom of our Creator, which his divine munificence has so liberally and so immediately placed before us?" In 1761, his first work, the British Zoology, was commenced, and upon a large scale. When completed, it contained 132 folio plates. This afterwards went through many smaller editions; and supplemental volumes were at times added. It appears that the later editions yielded some return, perhaps considerable for the period; and although loss was sustained, from the expensive form of publication first employed, the after profits were always applied to some charitable institution. He tells us at one part of his literary life, "Mr Benjamin White paid me £100 for permission to publish an octavo edition, which I immediately vested in the Welsh Charity School." Latin and German editions, with the plates, were also published abroad.

The best and most complete copies of this work are the quarto editions published in 1776 and 1777, in four volumes, the last containing the Crustaceæ and Shells. The plates are chiefly executed by Mazell, and some from drawings by Edwards. They are in many instances characteristic, and the workmanship bold. The best are some of the Water-fowl, and the plates of the last volume. The letter-press is clear, and not lengthened, written in great part from personal observation, and oftentimes with a view to a contrast with the writings of his continental rival Buffon. These naturalists, as we shall presently see, were acquainted with each other, and, although on friendly terms, several little jealousies arose, which can be traced in their respective writings. The following extract from the natural history of the Mole, is evidently aimed at the scepticism of Buffon, and will serve as a specimen of the descriptive style of this work:—

"There are many animals in which the Divine Wisdom may be more agreeably illustrated; yet the uniformity of its attention to every article of the creation, even the most contemptible, by adapting the parts to its distinct course of life, appears more evident in the mole than in any other animal.

"A subterraneous abode being allotted to it, the seeming defects of several of its parts vanish; which, instead of appearing maimed, or unfinished, exhibit a most striking proof of the fitness of their contrivance.

" The breadth, strength, and shortness of the fore-feet, which are inclined sideways, answer the use as well as the form of hands, to scoop out the earth to form its habitation, or to pursue its prey. Had they been longer, the falling in of the earth would have prevented quick repetition of its strokes in working, or have impeded its course. The oblique position of the fore-feet has also this advantage, that it flings all the loose soil behind the animal.

" The form of the body is not less admirably contrived for its way of life: the fore part is thick, and very muscular, giving great strength to the action of the fore-feet, enabling it to dig its way with amazing force and rapidity, either to pursue its prey or elude the search of the most active enemy. The form of its hind parts, which are small, and taper, enables it to pass with great facility through the earth that the fore-feet had flung behind; for, had each part of the body been of equal thickness, its flight would have been impeded, and its security precarious.

" The smallness of the eyes (which gave occasion to the ancients to deny it the sense of sight) is to this animal a peculiar happiness; a small degree of vision is sufficient for an animal ever destined to live under ground. Had these organs been larger, they would have been perpetually liable to injuries, by the earth falling into them; but Nature, to prevent that inconvenience, hath not only made them very small, but also covered them very closely with fur.

Anatomists mention (besides these) a third very wonderful contrivance for their security, and inform us, that each eye is furnished with a certain muscle, by which the animal has the power of withdrawing or exserting them, according to its exigencies.

" To make amends for the dimness of its sight, the mole is amply recompensed by the great perfection of two other senses, those of hearing and smelling. The first gives it notice of the most distant approach of danger: the other, which is equally exquisite, directs it in the midst of darkness to its food. The nose, also, being very long and slender, is well formed for thrusting into small holes, in search of the worms and insects that inhabit them. These gifts may, with reason, be said to compensate the defects of sight, as they supply, in this animal, all its wants, and all the purposes of that sense."

An appendix is also added, containing much information from the older writers, with notices of additional British species, which are to this day rare. There is also a paper upon the migration of birds, wherein he strongly recommends the study of natural history to the clergy, as a relaxation to beguile the time not occupied with more arduous and important studies.

During the progress of this work, Pennant made a tour to the continent, where he met with many of the most noted foreign naturalists, and commenced an acquaintance and correspondence which was of much use to him. He visited the Count de Buffon

by invitation at Montbard; and his description of the seat and manners of this naturalist agree with what we have said in the memoir attached to the last volume. He says, the Count "was satisfied with my proficiency in natural history, and publicly acknowledged his favourable sentiments of my studies." A correspondence was afterwards maintained, and they were of mutual use to each other, though Pennant in his writings occasionally accuses the Count for not acknowledging the information he gave.

He travelled by Lyons to Switzerland, and at Berne became acquainted with the Baron Haller. He next visited some parts of Germany, and sailed down the Rhine to Holland. Here he met with Dr Pallas, and to this meeting may be ascribed the commencement of his History of Quadrupeds. Speaking of their meeting, he says, "from congeniality of disposition we soon became strongly attached. Our conversation rolled chiefly on natural history; and as we were both enthusiastic admirers of our great Ray, I proposed his undertaking a History of Quadrupeds on the system of our illustrious countryman, a little reformed. He assented to my plan, and wrote me a long letter, in which he sent an outline of his design, and his resolution to pursue it with all the expedition consistent with his other engagements." This, Pallas was prevented from performing, being sent at the head of an expedition to the northern parts of the Russian dominions,

and it "was fated," Pennant says, "to be accomplished by an inferior genius." We shall notice this work again in its order of publication.

Upon his return to England, a third volume was added to British Zoology containing Fishes; and various additions and improvements were made on the others. He let slip no opportunity of acquiring additional knowledge upon the various subjects he so ardently pursued; his mind, he remarks, "was always in a progressive state, it could never stagnate: it carried me farther than the limits of our island, and made me desirous of forming a zoology of some distant country." This was the commencement of his Indian Zoology, but which was given up very soon after its commencement. Fifteen plates only were engraved in small folio, and the expense was partly defrayed by Sir Joseph Banks, to whom our author had been some time previously introduced, and who never failed to encourage, by his counsel or purse, any work which tended to advance the arts or sciences. The copperplates were given to Reinhold Forster, who carried them abroad, and published them with a German translation of the letter-press.

Pennant now meditated a longer excursion. Scotland was at this time unexplored by any naturalist, and a journey to the northern parts was looked upon as a comparatively dangerous undertaking. It was accordingly selected as likely to afford a good field of observation, and he commenced his first tour on

the 26th of June 1769. The account of this tour was not published till the year following. He set out from Chester, and kept a regular journal of every incident from that place till his return, taking sketches of all that struck him as remarkable in the scenery, buildings, and antiquities. He travelled what is called the east road, and entered Scotland from Berwick-upon-Tweed. By the way, he visited the Fern Islands, lying off the Northumbrian coast, a favourite resort, during the breeding-season, of many species of sea-fowl; and it is interesting now to compare his account with a notice of the birds more recently inhabiting these islands, published a few years ago by the British ornithologist of our own times. In the former, the Little Auk and Black Guillemot are both mentioned as occurring: while now, the first does not find a place at all among the Northumbrian birds, and the second is only met with occasionally. He proceeded onwards by Edinburgh, and made nearly the circuit of the mainland of Scotland, travelling along the east coast by Perth, Aberdeen, Inverness, &c. and returning by Fort-William, Loch Awe, Inverary, and Glasgow, again entered England by Carlisle. The Tour is written with much clearness, as well as candour. A prejudice against Scotland, regarding its great inferiority of climate, and almost barbarous condition of the northern inhabitants, existed, and to a certain extent influenced the views of the tourist; but a mind apparently at ease and contented with itself, and alive to the beau-

ties of nature, whether in the highest state of cultivation by art, or in all its rugged wildness, enjoyed the scenery of the Highlands, and made allowances for those wants which had been left in the richer plains of merry England.

Many parts struck his imagination, and left a vivid impression on his memory. The route from Taymouth to Killin, Inverary, and along the banks of Loch Lomond to Glasgow, he says is a tract unparalleled for the variety and frequency of fine and magnificent scenery. When leaving Inverness, he thus describes the banks of Loch Ness: "I enjoyed along its banks a most romantic and beautiful scenery, generally in woods of birch or hazel, mixed with a few holly, white thorn, aspen, ash, and oak, but open enough in all parts to admit a sight of the water. Sometimes the road was straight for a considerable distance, and resembled a fine and regular avenue—in others it wound about the sides of the hills which overhung the lake —the road was frequently cut through the rock, which on one side formed a solid wall, on the other a steep precipice. In many parts we were immersed in woods—in others, they opened, and gave a view of the sides and tops of the vast mountains soaring above. Some of these were naked; but in general covered with wood, except on the mere precipices, or where the grey rocks denied vegetation, or where the heath, now glowing with purple blossoms, covered the surface. The form of the hills was very various and

irregular, either broken into frequent precipices, or towering into rounded summits, clothed with trees, not so close but to admit a sight of the sky between them. The wild animals which possessed this wild scene were stags and roes, black game, and grouse: on the summits white hares and ptarmigans." He seems equally struck with the scenery round Invercauld. "The views from the skirts of the plain near Invercauld, are very great. The hills that immediately bound it are clothed with trees, particularly with birch, whose long and pendent boughs, waving a vast height above the head, surpass the beauties of the weeping willow. The southern extremity is pre-eminently magnificent: the mountains form a vast theatre, the bosom of which is covered with extensive forests of pines—above, the trees grow scarcer and scarcer, and then seem only to sprinkle the surface—after which, vegetation ceases, and naked summits of surprising height succeed, many of them topped with perpetual snow;—and, as a fine contrast to the scene, the great cataract of Garvalbourn, which seems at a distance to divide the whole, foams, amidst the dark forest, rushing from rock to rock to a vast distance." Thus could he seize the characters of the scenes he visited, the sudden effects of light and shade on the mountain lochs, with their rugged precipices and tangled thickets, or the dark and deep, yet rich tints of a boundless waste, in storms of wind and rain.

This Tour is also illustrated with views of the

scenery, in many instances very correct. They are drawn and engraved mostly by his draftsman Moses Griffith, who accompanied him on the greater number of his excursions, and possessed considerable talents. It is curious now to compare these with the same places, after the lapse of nearly a century. Some of the seats at that time newly formed, without shelter, surrounded with bare hills, or with plantations yet in their infancy, are now embowered in a gorgeous shade of venerable oak and chestnut, and often adorned with the more tender shrubbery of the modern times, which has usurped the place of the birch and mountain ash.

The antiquities—the most valuable paintings in the seats of the chiefs or nobles—the manners of the people, and their superstitions, were all noted down;—and the commerce of the country, with the possiblity of its improvement, seems to have been anxiously inquired into.

The salmon and other fisheries are generally noticed in passing; and the rents, with the number of fish caught yearly in some of the most important of the former, are mentioned, which shew a depreciation when compared with the results of the present revenues. He mentions *Char* as abundant in most of the Highland lochs, but only upon the authority of the inhabitants. This is a difficult fish to procure in the summer without nets; and I have been often told of their abundance, without being able to see specimens. It will be interesting hereafter to as-

certain the species; for, in a late excursion made by Dr Graham, accompanied by his pupils, and a party of scientific friends, they were mentioned as above two feet in length. Trout, he says, have also been taken in the Highlands above 30 lb., which would prove at that period the knowledge of this large species, though the distinctions were not ascertained. He is wrong, however, in supposing the Phinnochs to be the young of the Great Trout, which he does at one or two places on the authority of the fishermen. He met with this fish in abundance in several places. "They come in August, and disappear in November. They are about a foot long, their colour grey, spotted with black, their flesh red: they rise eagerly to a fly. Fifteen hundred are sometimes taken at a draught." This is their character correctly, and in few words. They are one of the most graceful of the *Salmonidæ*, and are at once known by the peculiar greyish-green of their back contrasting strongly with the black spots. They continue still very abundant in the rivers in the north of Scotland, rising eagerly, and affording much sport to the angler with light tackle. Towards the south, they appear to decrease, but are perhaps to be found in most Scottish waters, though the rivers running into the Solway may boast of the greatest share.

In like manner were the animals and birds sought after. The alpine hare was found, and esteemed a novelty, and he remarks that "it is full of frolic

when kept tame, is fond of eating honey and caraway comfits, and prognosticates a storm by eating its own dung." One of the most important of the feather tribe which he mentions, is the Capercaillie, then found in the pine forest of Glenmoriston and Strathglass, which may be looked upon as the latest indications of the remains of this splendid bird. I believe he also continues the only authority for the introduction of the Pine Grossbeak *(Pyrrhula enucleator)* to the ornithology of Scotland: he saw them in August flying in the forests about Invercauld.

He finished this tour by Inverary, Glasgow, and Edinburgh. Taking from thence the bleak road to Moffat, he visited Dr Walker, and entering England again by Gretna and Carlisle, arrived at his home in safety, after an absence of nearly three months.

The pleasure he enjoyed during this tour, and the information he received, so necessary to the next editions of his British Zoology, induced him to undertake another, and to extend his researches farther, into what he had found an interesting country, and to judge of it for himself—or, as he somewhere quotes,

"Yet still by Nature, not by censure try."

He commenced his second journey in the summer of 1772, "in order," he says "to render more complete my preceding tour, and to allay that species of

restlessness that infects many minds, on leaving any attempt unfinished." This time he had two gentlemen for companions, who were ardent admirers of Nature, and afterwards became known to the literary world, the Rev. J. Lightfoot and the Rev. J. Stewart of Killin—the one an acute botanist, and the other intimately acquainted with the customs and language of his country.

As before, he set out from Chester, visited the English lakes, reached Carlisle, and after spending a considerable time at Netherby,* entered Scotland, and skirted the Esk to Langholm.

He seems to have been very much struck with the beauty of the scenery along the banks of the Esk. "The scenery," says he, "is great and enchanting: on one side is a view of the river Esk, far beneath, running through a rocky channel, and bounded by immense precipices, in various places, suddenly deepening to a vast profundity; while in other parts it glides over a bottom covered with mosses, or coloured stones, that reflect through the pure water tints glaucous, green, or sapphirine. These various views are in most places fully open to sight; in others suffer a partial interruption from the trees that clothe the steep banks, and shoot out from the brinks and fissures of the precipices. The ride was extremely diversified through thick woods, or small thickets, with sudden transitions from shade into rich

* The Seat of Sir James Graham, First Lord of the Admiralty.

and well husbanded fields, bounded on every side with woods, with views of other woods still rising beyond. No wonder the inhabitants yet believe the Fairies revel in these delightful scenes."

From this place he again returned south, and after some delay recrossed the border at Gretna, and proceeded to Dumfries, which seems to have been the intended point of commencement for his northern journey. He visited the principal beauties and ruins in the district, and proceeded on his way up the Nith, by Lanarkshire, to Glasgow. When describing the Solway Firth, he mentions the hunting of salmon, and although this method of taking these active fish was almost extinct, his work is a record of its being still practised in 1772, or about sixty years since. There was only one person on the coast who was expert enough to practise the diversion.

The appearance and bursting of the Solway Moss is also described; he had seen it and the surrounding country in his former tour. Speaking of the latter, he says, "it has been finely reclaimed from its original state, prettily divided, well planted with hedges, and well peopled; the ground, originally not worth sixpence an acre, was improved to the value of thirty shillings. At this time it was a melancholy extent of black turbery, the eruption of the moss having in a few days covered grass and corn; levelled the boundaries of almost every farm; destroyed most of the houses, and driven the poor inhabitants to the utmost distress." An authentic account of this ca-

tastrophe, important also as an evidence of how little may effect a sudden change on the aspect of a country, must be interesting. The highest parts of the original moss subsided to the depth of about twenty-five feet, and the height of the moss upon the invaded hollows was at least fifteen feet. Netherby received a view of land and trees unseen before.

"Solway moss consists of sixteen hundred acres; lies some height above the cultivated tract, and seems to have been nothing but a collection of thin peaty mud: the surface itself was always so near the state of a quagmire, that in most places it was unsafe for any thing heavier than a sportsman to venture on, even in the driest summer.

"The shell or crust that kept this liquid within bounds, nearest to the valley, was at first of sufficient strength to contain it; but, by the imprudence of the peat diggers, who were continually working on that side, at length became so weakened, as not longer to be able to resist the weight pressing on it. To this may be added, the fluidity of the moss was greatly increased by three days' rain of unusual violence, which preceded the eruption; and extended itself in a line as far as Newcastle, took in a part of Durham, and a small portion of Yorkshire, running in a parallel line of about equal breadth, both sides of which, north and south, experienced an uncommon drought. It is singular that the fall of Newcastle Bridge and this accident happened within a night of each other.

"Late in the night of the 17th of November of the

last year, a farmer, who lived nearest the moss, was alarmed with an unusual noise. The crust had at once given way, and the black deluge was rolling towards his house. When he was gone out with a lantern to see the cause of his fright, he saw the stream approach him; and first thought that it was the dunghill, that, by some supernatural cause, had been set in motion; but soon discovering the danger, he gave notice to his neighbours with all expedition; but others received no other advice but what this Stygian tide gave them; some by its noise, many by its entrance into their houses, and I have been assured that some were surprized with it even in their beds; these past a horrible night, remaining totally ignorant of their fate, and the cause of the calamity, till the morning, when their neighbours with difficulty got them out through the roof. About 300 acres of moss were thus discharged, and above 400 of land covered; the houses either overthrown or filled to the roofs; and the hedges overwhelmed; but, providentially, not a human life lost. Several cattle were suffocated, and those which were housed had a very small chance of escaping. The case of a cow is so singular as to deserve mention. She was the only one of eight, in the same cow-house, that was saved, after having stood sixty hours up to the neck in mud and water. When she was relieved, she did not refuse to eat, but would not taste water, nor could even look at it without shewing manifest signs of horror.

"The eruption burst from the place of its discharge like a cataract of thick ink, and continued in a stream of the same appearance, intermixed with great fragments of peat, with their heathy surface; then flowed like a tide charged with pieces of wreck, filling the whole valley, running up every little opening, and, on its retreat, leaving upon the shores tremendous heaps of turf, memorials of the height this dark torrent arrived at. The farther it flowed, the more room it had to expand, lessening in depth, till it mixed its stream with that of the Esk."

Arrives again at Glasgow, and having spent some days in visiting the places of note on the Clyde, sets sail for Greenock in a little cutter of ninety tons, to explore the Western Isles of Scotland. He first landed on Bute and Arran; on the latter he remained for some time, and devoted a considerable space to the description of its rocky coast, produce, and natural history. On the mountains here he met with what he terms a gigantic frog, and notices it as distinct from the common species of the Lowlands. This frog, common on most of the alpine districts of Scotland, has been often noticed; but I am not sure that species from these localities have been properly examined, and consider it probable that it may yet constitute a third species to the fauna of Scotland.

From this he was anxious to visit the Crag of Ailsa, where he was much struck with its precipices, and birds, numerous as swarms of bees. He enumerates what he saw, which are not beyond the

common species. "The thrushes," he observes, "exerted the same melody in this scene of horror, as they do in the groves of Hertfordshire." It may be observed, that these birds do not dislike an abode by the shore, wherever a little brush will shelter them, and the "grove of elder trees," beneath the ruins, would afford ample covering for their nests, the only time it would be needed, as, with an advance of season, they would commence their migration to a more hospitable shore. The common black snail, *Arion ater*, and striped-shell snail, were seen "very unexpectedly;" but they are both occasionally met with in most of the little islands where there is much rough covering, besides several other land shells.

From Ailsa Crag the party skirted the Mull of Cantyre, visited Gigha, and attempted to reach the isle of Isla. They were prevented from doing this by a calm; and, during its annoying continuance, with his characteristic industry, Pennant engaged himself in compiling an ancient history of the Hebrides. It was not till during night, that the breeze sprung up, they were enabled to enter one of the small harbours in Jura. Here the tourists experienced the attention of the principal proprietor, Mr Campbell, who sent them horses to ride over and explore the island. This they proceeded to do on the day following, and ascended the highest of the Paps. This mountain is compared to a huge cairn, of very difficult ascent; but the labour is amply recompensed by "the grandeur of the prospect from this sublime spot." "Jura

itself afforded a stupendous scene of rock, varied with little lakes innumerable." From the general appearance of the island, and from the *dykes* which in different places run towards the sea, Pennant argues a volcanic origin, or at least a considerable change by the influence of fire. One of the principal *dykes* is on the west side of the hill. It runs in a narrow stripe of rock, terminating in the sea, and is generally called the "Slide of the Old Hag." After surveying this interesting island, they cross the Sound to Ilay, and are as hospitably received by Mr Freebairn, the superintendent of the mines; and having visited the works of lead and iron, set out upon an excursion on horseback, accompanied by several gentlemen of the island, who had offered their service to conduct them to whatever was worthy of being seen. The former tour was written with so much candour and good feeling, that the proprietors were always anxious to point out the improvements which had been made, and the capabilities which their own favourite land possessed for cultivation; and in his whole excursion, he met with that civility, attention, and assistance, which one travelling for information and the good or improvement of his country deserves. He enters at considerable length into the manners of the inhabitants, their ancient customs, and present superstitions. In its natural history, he mentions wild geese breeding on the moors; a more southern range of incubation for these birds than what has been generally supposed.

From Ilay sails to Oronsay, which is explored, its ancient monastery and cross are described and illustrated by engravings; and red-billed choughs are met with in its cliffs. Colonsay, Iona and Cannay are in like manner visited, and an expedition is planned for Staffa. In this he is, however, disappointed; and from the boisterous state of the weather, is obliged to remain contented with a distant view from the vessel of this singular rock. But in the published tour there is a very good account of every part of the island by Sir Joseph Banks, who was more fortunate in his attempt to land here on his voyage to Iceland. It is illustrated by five characteristic views. The island of Mull and Skye next engross the attention of our tourists; and from the latter they land on the mainland in Ross-shire, wishing to proceed over land to the northern extremity of Scotland. The attempt is made, but the party are obliged to return "the same road, through a variety of bog and hazardous rock, that nothing but our shoeless little steeds could have carried us over:—

A wondrous token
Of heaven's kind care, with necks unbroken."

Such was the state of the roads sixty years since, in a country which, though, to the water's edge, bearing almost an Arctic or Lapland stamp, is now traversed by highways, over which in summer at least the frailest vehicle would safely travel. For these and other valuable improvements, the country is in-

debted to the praiseworthy exertions of the lately deceased Duke of Sutherland.

From hence, Skye is again visited; Mull, Lismore, many of the smaller rocks and Scarba, each having as much attention devoted to it as its appearance and productions seemed to require. From the last, Pennant finally landed at Ardmaddie, the residence of Captain Campbell, who had taken charge of his horses; and having dismissed the Captain of his little vessel, and taken leave of his companions, he concluded his voyage among the Hebrides, highly pleased with the excursion, and grateful for the kind treatment and anxiety to promote his wishes, which was every where manifested.

The latter part of this tour is performed with more expedition, yet employing sufficient time to see the most of what was worthy of notice. The route was by Inverary, Dunkeld, Perth, Montrose*, Forfar, St Andrew's; thence skirting the Frith of Forth to Stirling, and, crossing its bridge, he arrived again in Edinburgh by the opposite shore. From Edinburgh, the road is varied from that pursued during the first tour; and Roxburghshire and the banks of the Tweed are followed, and the English border recrossed at the small burn opposite the village of Birgham, whence, from his anxiety to reach Downing after so long an

* Remarkable for the number of lobsters taken on the coast near the village of Usan, from whence 60,000 or 70,000 are sent annually to London, and sold at the rate of 2½d. a-piece, provided they are five inches round the body; if less, two are allowed for one.

absence, he speedily accomplishes the remainder of his journey *.

Thus was concluded Pennant's second journey to Scotland; and we may perhaps be accused of having devoted more space to the examination of these Tours than the limits of this Memoir could allow; but, after the British Zoology, we consider them the most important of his works, and of great interest to a modern tourist who will travel the same route, and compare the remarks relating to almost every part of the economy and natural history of the various districts, with the state of the country at the present time; while their reputation abroad is sufficiently attested by German and French translations appearing in these respective countries.

The best editions of this work are those in 4to, published by Benjamin White in 1790, in three volumes, of which two are devoted to the second Tour. They are illustrated by 134 plates, in general well and boldly executed.

The last volume of his second Tour did not appear till nearly three years after his return, and, during that period, though much of his leisure was occupied in preparing for publication the various memoranda which he had so assiduously collected, and in superintending the new editions of his former journey, he found time to make several excursions of less ex-

* During this tour, a great part of the materials for Dr Lightfoot's Flora Scotica were collected, in the publication of which Mr Pennant was of much service.

tent, and to assist his friends with his advice and experience. He visited the Isle of Man, Northamptonshire, and made the first notes of his tour from Chester to London. The most important incident which occurred during the latter, took place at Buckingham, where he narrowly escaped a death suited to an antiquary. "I visited the old church at eight o'clock in the morning; it fell before six in the afternoon, and I escaped being buried in its ruins."

He also made several excursions into North Wales, which supplied the materials for the first volume of his tour in that country, published in 1778, and therefore the next of his works which we have to examine. It forms one thick 4to volume, and commences as usual from Downing, upon the same plan as his Scotch tours. It, however, contains less of the natural history of the districts, and is mostly occupied with ancient history and antiquities, and is a valuable record of the state of the county at the period when it was written. The most important portions of the work are, a description of the ancient and curious city of Chester, which occupies nearly a hundred pages, and must be interesting to every reader; and the history of the career of Owen Glyndwr, who so long disputed the supremacy of Wales with Henry IV., one whom Shakspeare tells was not "in the roll of common men," and at whose nativity—

> "The front of heaven was full of fiery shapes,
> Of burning cressets; and at my birth,
> The frame and huge foundation of the earth
> Shak'd like a coward."

This volume leaves great part of Wales unexplored, particularly the higher and wilder districts, and he desired to render it more complete by visiting those parts. An excursion is undertaken to Snowdon and the alpine range of the country, the results of which were published, under the title of "A Journey to Snowdon;" and a third journey is performed, which, with the Snowdonia, forms the second volume of the Tour in Wales, and appeared about 1781. This is illustrated with many plates, and is written, like the first, with more attention to the history and antiquities than to the works of nature. There are, however, occasionally short notices regarding both the botany and zoology. In the former he was assisted by Lightfoot, to whose inspection, most probably, his collections on returning would be submitted. In the zoology there is a notice regarding the beaver, which shews that that animal was once known to the Welsh. He mentions that on "the Conway there is a deep, wide, and still water, called *Llyn yr Afangc*, or the Beaver's Pool; our ancestors also called them, with great propriety, *Llost Lyday*, or broad-tailed animal. Their skin was of such esteem, as to be valued at an hundred and twenty pence,"—a large sum in those days, and still greater when compared with the price of the skin of other animals; an ermine, otter, wolf, or fox, were only valued at twelve pence.

In another part of the work he mentions a singular breeding-place for the heron, both from the situation

and the dislike of the bird to companions of different kinds at the season of incubation. It is Llandudno or St Orm's Head. "The western extremity is a vast precipice, the haunt of various sea fowl in the time of breeding. The gulls possess the lower part, above them the razor-bills and guillemots have their quarters; over them croak the cormorants; and herons occupy the higher regions." There are also many curious records of the Welsh, which will be read with much interest. Fifty-three plates illustrate both volumes, and a supplement of ten was added to the last, etched by Moses Griffiths.

It was about this time that the second edition of the history of Quadrupeds, alluded to at page 11, appeared in two volumes quarto. This had been previously published as a *Synopsis*, with about thirty plates. These are now increased to fifty-two, and it received the additions which a better knowledge of the subject suggested. The work was originally intended as a reference to the Natural History and plates of Buffon, which are troublesome to consult, from their want of arrangement. In the same manner, he wrote out and published a systematic catalogue of the birds, which we regret that he did not also extend.

In the year following, the Journey from Chester to London appeared, written, he tells us, "from journals made at different times in my way to town. I frequently made a considerable stay at several places, to give to this book all the fulness and accu-

racy in my power." It was published in a quarto size, illustrated by twenty-three plates.

The next work which Mr Pennant published was the Arctic Zoology; and, though necessarily a compilation, it is important as a connected and condensed view of the progress of discovery, till the period of its appearance, along the northern coasts of Europe, Asia, and America, with an account of the inhabitants and productions of these wild, and in most instances, dreary shores. Since that period, expeditions of discovery have done much to further our geographical knowledge of these countries; and the immense accessions of the new productions, in the various departments of Nature, will show that modern zeal has fully equalled the researches of our ancestors. A comparison of the Northern Faunas lately published, will prove very interesting, while the reader will be convinced of the value of the Arctic Zoology, by the frequent reference to it which occurs in their pages. The origin and design of this work will be best made known by a short extract from the author's Advertisement. "This work was begun a great many years past, when the empire of Great Britain was entire, and possessed the northern part of the New World with envied splendour. At that period I formed a design of collecting materials for a partial history of its animals; and, with true pains, my various correspondents made far greater progress in my plan than my most sanguine expectations had framed. Above a century ago, an illustrious prede-

cessor in the line of Natural History, who as greatly exceeded me in abilities as he did in zeal, meditated a voyage to the New World, in pursuance of a similar design. The gentleman alluded to was Francis Willoughby, Esq., who died in 1672, on the point of putting his design into execution. Emulous of so illustrious an example, I took up the object of his pursuit; but my many relative duties forbade me from carrying it to the length conceived by that great and good man. What he would have performed, from an actual inspection in the native country of the several subjects under consideration, I must content myself to do, in a less perfect manner, from preserved specimens transmitted to me; and offer to the world their Natural History, taken from gentlemen or writers who have paid no small attention to their manners." During the progress of this work, he received assistance from Dr Garden, in America, Pallas, Thunberg, Sparman, Muller, and Fabricius, besides many other northern naturalists, more eager than another to render what assistance they could to this great undertaking.

The Arctic Zoology is contained in three quarto volumes, to which a supplement of 163 pages was afterwards added. The first volume is entirely devoted to a sketch of the range of coast and country which is to be described. He commences at Dover, and carries his reader along the eastern side of Britain, to the Orkneys, Shetland, the Faroe isles, and Iceland. He returns, and sets out again from Calais,

whence he travels as it were opposite his former course, entering the Baltic, exploring the shores of Lapland, Sweden, and Spitzbergen; from hence all the northern coasts and islands of Asia are traced, and the arctic latitudes of North America, as far as discovery had extended. The different tribes, the animals and productions, of each country are summarily mentioned, and the account is interspersed with remarks on their geographical distribution, comparing the zoology and vegetation with that of Britain. The second volume commences the detailed description of the animals and birds which are found in the countries he has reviewed in the first; and the third contains the remaining part of the birds, the reptiles, and fishes, and concludes with an enumeration of a few insects. The volumes are illustrated by twenty-six plates, with two maps designed to shew the countries described.

The only remaining work of any consequence which this assiduous writer published during what may be termed the active part of his life, was the History of London, in one quarto volume. It is written and illustrated in the style of his other works, and possesses much local interest. Pennant had now reached his sixty-seventh year, in the enjoyment of nearly uninterrupted good health. The infirmity of years had almost imperceptibly stolen upon him, and he acknowledged that "his body may have abated of its wonted vigour." In his Literary Biography, when speaking of this part of his life,

he says, " A few years ago, I grew fond of imaginary tours, and determined on one to climes more suited to my years, more genial than that of the frozen north. I still found, or fancied that I found, abilities to direct my pen. I determined on a voyage to India." We can almost imagine the day-dreams which suggested these narratives, can follow the now aged naturalist to the splendid scenes which his extensive reading would call up in the east, and see him in the fancied delight of traversing a country so rich in the stores of both art and nature. But he could not stop here: he built up a fabric which he meanwhile knew he never would complete; and the same well-stored imagination carried him over most of the countries in the world. We must agree with his concluding reflection, " Happy is the age that could thus beguile its fleeting hours without injury to any one, and, with the addition of years, continue to rise in its pursuits."

The work which he now planned at his sixty-seventh year, was to consist of fourteen quarto volumes! It was to be entitled, " Outlines of the Globe," and was to contain a sketch of every country in the world, with their productions. Four volumes only were published; and two of these appeared after the decease of their author, being superintended by his son. The two first are devoted to India, the one containing what he denominates Western Hindostan and the Island of Ceylon; the second reviewing the line of the Ganges, or Gangetic

Hindostan. These volumes are gleaned from the works of his predecessors, and touch on almost every branch. They are illustrated by a map and several plates. Among those devoted to natural history are three botanical plates etched by Sowerby; and a representation of the Passarage Bustard, *Otis auritа* of Dr Latham, whose sexes, and different states of plumage, seem only to have been lately known to the continental ornithologists.

The third and fourth volumes of the same work contain the history of India beyond the Ganges, China, and Japan, with the Malayan isles and New Holland. These their author did not live to see finished; but having left the manuscript complete, they were printed under the care of his son, and appeared in 1800.

We have now endeavoured to give a brief account of the voluminous works of Thomas Pennant, which, short in comparison with the originals, and wanting much of their interest, will, we fear, have appeared tedious to many of our readers; but, to use the words of a writer to whom we are indebted for many eloquent memoirs, beautifully detailing the careers of his predecessors and companions in research, "When the life of a man is entirely devoted to the sciences, it cannot be expected that it will present a variety of incident; it will be found most truly in the analysis of his works*." This we have found verified,

* Cuvier.

while searching for materials to pourtray the character of our British naturalist. His career, we have before said, has been void of all romance, and may be comprised in exercising his duties as a parent, and active country gentleman; while the vacancies will be filled up by a perusal of the interesting works which he has left, and of which we have now tried to give a description.

The disposition of Pennant was one of great activity, a quality which was diffused over his bodily as well as mental powers. He travelled on horseback, and in this manner performed all his tours: he was an early riser, and was extremely temperate in his living, refraining always from supper, which he stigmatizes as the "meal of excess."

His health continued unimpaired till within a few years of his decease. The illness and death of a favourite daughter threw the first clouds over the serenity of his old age; and soon after he broke the patella of his knee while ascending a flight of steps—an accident which confined him long to his room, and though it allowed him to pursue his usual exercise on horseback, the bones never united, and he could not walk afterwards without difficulty. In another year his spirits seem to have improved, for he published his account of the parishes of Whiteford and Holywell, with the motto "*Resurgam;*" but it was only a passing exertion, and he began to decline gradually. This was two years previous to his death, and during that time he continued to revise

and correct the manuscript of the Outlines of the Globe. At this time, his native county became agitated with political brawls, and the mind of the old man, always interested in its welfare, had not vigour to cope with the arguments of his antagonists. Another heavy loss was sustained in the death of his friend and neighbour Sir Roger Mostyn. These circumstances had a serious effect on his health and temper, and perhaps hastened the termination of his days. In October his limbs became swelled, and he was soon after confined to his bed: he became gradually more exhausted, and, after a protracted illness, he expired with all the resignation of a Christian, on the 16th December 1798, at the advanced age of seventy-two.

Mr Pennant was married twice, first, in 1759, to the sister of Thomas Falconer, Esq. of Chester, and, second, to the sister of Sir Roger Mostyn, whose property marched with Downing, and whose death had so depressing an effect on his spirits a few months before his own decease. By these alliances he had several children. His son David superintended the publication of the volumes of the Outlines of the Globe which were left complete at his decease; but none appear to have had the same active mind as their father, or to have continued his literary character by their own works.

His style is correct, and well fitted for description. Want of arrangement has been the great fault found with his historical writings; but this was a

necessary consequence, from having chosen the form of a journal for his Tours, and of following the country and incidents as they actually occurred. Straggling facts, suggested by the district, are perhaps too often introduced.

His works on Natural History were much valued at the time of their publication, and contained the greater part of the knowledge of the times, upon the subjects of which they treated. The value in which they were held abroad was seen in the translations which appeared in various countries; and the British and Arctic Zoologies are universally consulted and referred to in the publications of the present day. Though there is much in these voluminous writings that has been superseded by more recent discoveries, still they contain a great deal of curious and interesting information; and, perhaps, as they are now but rarely to be met with, except in public libraries, we may do an act of justice to the memory of Pennant, as well as confer a favour on our readers, by selecting a few extracts as an appropriate accompaniment to the preceding sketch. In the first volume of his Arctic Zoology, he gives a truly picturesque description of the mode of taking eggs and sea-fowl, as practised in some of the Orkney and other neighbouring islands.

"Multitudes of the inhabitants of each cluster of islands feed, during the season, on the eggs of the birds of the cliffs. The method of taking them is so very hazardous, as to satisfy us of the ex-

tremity to which the poor people are driven for want of food. Copinsha, Hunda, Hoy, Foula, and Ness Head, are the most celebrated rocks; and the neighbouring natives are the most expert climbers and adventurers after the game of the precipice. The height of some is above fifty fathoms; their faces roughened with shelves or ledges, sufficient only for the birds to rest and lay their eggs. To these the dauntless fowlers will ascend, pass intrepidly from the one to the other, collect the eggs and birds, and descend with the same indifference. In most places the attempt is made from above; they are lowered from the slope contiguous to the brink by a rope, sometimes made of straw, sometimes of the bristle of the hog; the last they prefer even to ropes of hemp, as it is not liable to be cut by the sharpness of the rocks; the former is apt to untwist. They trust themselves to a single assistant, who lets his companion down and holds the rope, depending on his strength alone, which often fails, and the adventurer is sure to be dashed in pieces, or drowned in the subjacent sea. The rope is often shifted from place to place, with the impending weight of the fowler and his booty. The person above receives signals for the purpose, his associate being far out of sight, who, during the operation, by help of a staff, springs from the face of the rocks, to avoid injury from the projecting parts.

"In Foula, they will trust to a small stake driven

into the ground, or to a small dagger which the natives usually carry about them, and which they will stick into the ground, and twisting round it a fishing cord, descend by that to climbing places, and after finishing their business, scramble up by it without fear. Few who make a practice of this, come to a natural death. They have a common saying, 'Such a one's *gutcher* went over the *sneak*; and my father went over the *sneak* too.' It is a pity that the old Norwegian law was not here in force. It considered this kind of death as a species of suicide. The next of kin, in case the body could be seen, was directed to go the same way; if he refused, the corpse was not to be admitted into holy ground.

"But the most singular species of fowling is in the holm of Ness, a vast rock severed from the isle of Ness by some unknown convulsion, and only about sixteen fathoms distant. It is of the same stupendous height (1480 feet) as the opposite precipice, with a raging sea between, so that the intervening chasm is of matchless horror. Some adventurous climber, having reached the rock in a boat and gained the height, fastens several stakes on the small portion of earth which is to be found on the top; correspondent stakes are placed on the edge of the correspondent cliffs. A rope is fixed to the stakes on both sides, along which a machine, called a cradle, is contrived to slide, and by the help of a small parallel cord, fastened in like

manner, the adventurer wafts himself over, and returns with his booty, which is the eggs or young of the black-backed gull, and the herring gull."

We shall next accompany Pennant to the Faroe Islands, of which he has given an interesting description; as also of the common land birds, and the method of fowling practised by the inhabitants. "The list of land birds is very small; the cinereous eagle, the larmer, the sparrow-hawk, a species of owl, the raven, and hooded-crow, are the pernicious species. Ravens were so destructive to the lambs and sheep, that in old times every boatman was obliged to bring into the Sessions-house, on St. Olaus's day, the beak of one of those birds; or pay one skin, which was called the raven-fine, in case of neglect. The remaining land fowl are wild pigeons and stares, white wagtails, wrens, and sometimes swallows. The snow-bunting only rests here in spring, on its passage northward. The heron is sometimes met with; the spoon-bill is common; the sea-pie, water-rail, and lapwing are seen here. The birds of the rocks, such as puffins, razor-bills, and little auks, foolish and black guillemots, swarm here; and the *geyir-fugl* or great auk, at certain periods, visits these islands; the last, by reason of its short wing, incapable of flight, nestles at the foot of the cliffs. The skua, arctic, black-backed, and herring gulls, fulmars, manks, stormy petrels, imber and northern divers, wild swans and geese (the swans only vernal passengers towards the north),

eider ducks, havelda, or long-tailed ducks, corvorants, and the sula gannet, form the sum of the palmated fowl of these inhospitable spots.

"The manner of fowling is so very strange and hazardous, that the description should by no means be omitted. Necessity compels mankind to wonderful attempts. The cliffs which contain the objects of their search, are often two hundred fathoms in height, and are attempted from above and below. In the first case, the fowlers provide themselves with a rope eighty or a hundred fathoms in length. The fowler fastens one end about his waist, and between his legs, recommends himself to the protection of the Almighty, and is lowered down by six others, who place a piece of timber on the margin of the rock, to preserve the rope from wearing against the sharp edge. They have besides a small line fastened to the body of the adventurer, by which he gives signals that they may lower or raise him, or shift him from place to place. The last operation is attended with great danger by the loosening of the stones, which often fall on his head, and would infallibly destroy him, were it not protected by a strong thick cap; but even that is found unequal to save him against the weight of the larger fragments of rock. The dexterity of the fowlers is amazing; they will place their feet against the front of the precipice, and dart themselves some fathoms from it, with a cool eye survey the places where the birds nestle, and again shoot into their haunts. In

some places the birds lodge in deep recesses; the fowler will alight there, disengage himself from the rope, fix it to a stone, and at his leisure collect the booty, fasten it to his girdle, and resume his perilous seat. At times he will again spring from the rock, and in that attitude, with a fowling net placed at the end of a staff, catch the old birds which are flying to and from their retreats. When he hath finished his dreadful employ, he gives a signal to his friends above, who pull him up and share the hard-earned profit. The feathers are preserved for exportation; the flesh is partly eaten fresh; but the greater portion dried for winter's provision.

"The fowling from below has its share of danger too. The party goes on the expedition in a boat; and when it has attained the base of the precipice, one of the most daring, having fastened a rope about his waist, and furnished himself with a long pole with an iron hook at one end, either climbs or is thrust up by his companions, who place a pole under his breech, to the next footing-spot he can reach. He by means of the rope, brings up one of the boat's crew; the rest are drawn up in the same manner, and each is furnished with his rope and fowling-staff. They then continue their progress upwards in the same manner, till they arrive at the region of birds, and wander about the face of the cliff in search of them. They then act in pairs; one fastens himself to the end of his associate's rope, and in places where birds have nestled beneath his

footing, he permits himself to be lowered down, depending for his security to the strength of his companion, who is to haul him up again; but it sometimes happens that the person above is overpowered by the weight, and both inevitably perish. They fling the fowl down to the boat, which attends their motions and receives the booty. They often pass seven or eight days in this tremendous employ, and lodge in the crannies which they find in the face of the precipice.

"The sea which surrounds these islands is extremely turbulent. The tides vary greatly on the eastern and western sides. On the first, where is received the uninterrupted flood of the ocean from remote Greenland, the tide rises seven fathoms; on the eastern side, it rises only three. Dreadful whirlwinds, called by the Danes *oes*, agitate the sea to a great degree; catch up a vast quantity of water, so as to leave a great temporary chasm in the spot in which it falls, and carries away with it, to an amazing distance, any fishes which may happen to be within reach of its fury. Thus great shoals of herrings have been found on the highest mountains of the Faroe. It is equally resistless on land, tearing up trees, stones, and animals, and carrying them to very distant places. We must no longer laugh at the good Archbishop of Upsala (Olaus Magnus), who gravely tells us, that at times the rats called lemming are poured down from the clouds in great showers on the Alps of Norway.

We assent to the fact, but must solve the phenomenon by ascribing it to a whirlwind, as he does in one place, yet immediately supposes they may be bred in the upper regions out of feculent matter."

Following our tourist to Iceland, we shall select a few of his zoological observations on that remote island. "An attempt has been made to introduce the rein-deer; those which have survived the voyage have bred frequently. There can be little doubt of their succeeding; Iceland has, in common with Lapland, most of the plants for their summer's food, and abundance of the rein-deer *lichen* for their winter provision. Rats and mice seem to have been involuntarily transported. Both the domestic species are found here; and the white variety of the mouse, called in the Icelandic *skorger mys*, is common in the bushes. I suspect that there is a native species allied, as Dr. Pallas imagines, to the Oeconomic; for like that, it lays in a great magazine of berries by way of winter store. This species is particularly plentiful in the wood of Husafels. In a country where berries are but thinly dispersed, these little animals are obliged to cross rivers to make their distant forages. In their return with their booty to their magazines, they are obliged to repass the stream; of which Mr. Oleffen gives the following account:—'The party, which consists of from six to ten, select a flat piece of dried cow-dung, on which they lay the berries in a heap on the middle; then by their united force they bring

it to the water's edge, and after launching it, they embark and place themselves round the heap with their heads joined over it, and their backs to the water, their tails pendent in the water, serving the purpose of rudders.' When I consider the wonderful sagacity of beavers, and think of the management of the squirrel, which in cases of similar necessity make a piece of bark their boat, and tail their sail, I no longer hesitate to credit the relation.

"The common fox and the arctic are frequent; but they are proscribed and killed, in order to prevent the havoc they would make among the sheep. The polar bear is often transported from Greenland on the islands of floating ice; but no sooner is its landing discovered, than a general alarm is spread, and pursuit made till it is destroyed. The Icelanders are very intrepid in their attacks on this animal; and a single man, armed only with a spear, frequently enters the lists with this tremendous beast, and never fails of victory. A person who lived near Langeness, the extreme northern point, where the bears most frequently land, is still celebrated for having slain not fewer than twenty in single combat. There is a reward for every skin, which must be delivered to the next magistrate.

"The amphibious animals, or seals, are very numerous. Iceland being blest with domestic animals, has less use of this race than other arctic countries; yet they are of considerable advantage. The skins

are used for clothing; a good one is equal in value to the skin of a sheep, or the hide of a cow; and the fat supplies the lamps in the long nights with oil. The Icelanders have two species of native seals, the common called by them *land-sælur*, because it keeps near the coast; the other the great seal, or *ut-sælur*. They are taken in nets placed in the creeks and narrow bays, which they pass through to get on shore. When it begins to grow dark, the hunters make a fire, and fling into it the shavings of horns, or any thing that smells strong. This allures the seals, who strike into the nets and are taken. At other times a *Koder* or lure is tied to a rope, and placed before the nets; to which the seals, supposing it to be some strange animal, will eagerly swim, and strike into the nets; paying with their lives for their curiosity. This carries them sometimes so far, that they will stray to a considerable distance inland, attracted by a candle or the fire in a smith's forge. If they are young, they are capable of being tamed; they will follow their master, and come to him like a dog, when called by the name which is given them. The Icelanders have a strange superstition about these animals; they believe they resemble the human species more than any other; and that they are the offspring of Pharaoh and his host, who were converted into seals when they were overwhelmed in the Red Sea.

"Other species of seals are migratory; among

these is the harp, or *vade-sælur*, which quit the seas of Iceland in March, and swim through the Straits of Davies, by some unknown opening, to the farthest north, bring forth their young, and return by the north of Greenland in May, extremely lean, to the north of Iceland, continue their route, and return to that island about Christmas, chiefly upon the drift-ice, on which they are either shot or harpooned."

In describing the extreme northern coasts of Norway and Finmark, Pennant makes some incidental allusions to two of our early discoverers in those regions, and mentions a circumstance which appears to have given rise to the British Whale Fishery in the Arctic Seas. "The most northern fortress in the world, and of unknown antiquity, is Wordhuys, situated in a good harbour, in the isle of Wardoe at the extremity of Finmark, probably built for the protection of the fishing trade, the only object it could have in this remote place. A little farther eastward in Muscovitish Finmark, is Arzina, noted for the sad fate of that gallant gentleman, Sir Hugh Willoughby, who, in 1553, commanded the first voyage on the discovery by sea of Muscovia, by the north-east; a country at that time scarcely known to the rest of Europe. He unfortunately lost his passage, was driven by tempests into this port, where he and all his men were found the following year frozen to death. His more fortunate consort, Richard Chancellor, captain and

pilot-major, pursued his voyage, and renewed his discovery of the White Sea, or Bay of St. Nicholas, a place totally forgotten since the days of Ohthere. The circumstances attending his arrival, exactly resemble those of the first discoverers of America. He admired the barbarity of the Russian inhabitants; they in return were in amaze at the size of his ship, they fell down and would have kissed his feet, and when they left him, spread abroad the arrival of 'a strange nation of singular gentlenesse and courtesie.' He visited, in sledges, the court of Basilowitz II., then at Moscow, and laid the foundation of immense commerce to this country for a series of years, even to the remote and unthought of Russia.

"At the remote end of the isle of Maggeroe, is the North Cape, high and flat at top, or what the sailors call table-land. These are but the continuation of the great chains of mountains which divides Scandinavia, and sinks and rises through the ocean in different places, through the *Seven Sisters*, the nearest land to the pole which we are acquainted with. The first appearance above water, from this group, is at Cherie Island, in lat. 74° 30′, a most solitary spot, rather more than midway between the North Cape and Spitzbergen, or about 150 miles from the latter. Its figure is nearly round; its surface rises into lofty mountainous summits, craggy, and covered with perpetual snow. One of them is truly called Mount Misery. The horror of this isle

to the first discoverers must have been unspeakable; the prospect is dreary, black (where not hid with snow), and broken into a thousand precipices. No sounds are heard but of the dashing of the waves, the crashing collision of floating ice, the discordant notes of myriads of sea-fowl, the yelping of arctic foxes, the snorting of the walruses, or the roaring of the Polar bears.

"This island was probably discovered by Stephen Bennet in 1603, employed by Alderman Cherie, in honour of whom the place was named. The anchorage near it is twenty and thirty fathoms. He found there the tooth of a walrus, but saw none of the animals, their season here being past. This was the 17th of August. Encouraged by the hopes of profit, Bennet made a second voyage next year, and arrived at the island the 9th of July; when he found the walruses lying huddled on one another, a thousand in a heap. For want of experience he killed only a few; but in succeeding voyages, the adventurers killed (in 1606), in six hours time, seven or eight hundred; in 1608, nine hundred or a thousand, in seven hours; and in 1610, above seven hundred. The profit, in the teeth, oil, and skins, was very considerable; but the slaughter made among the animals frightened the survivors away, so that the benefit of the business was lost, and the island no more frequented. But from this deficiency originated the commencement of the Whale Fishery by the English."

Before quitting these regions, we shall give Pennant's description of the fantastic appearance of the ice. "The forms assumed by the ice in this chilling climate, are extremely pleasing to even the most incurious eye. The surface of that which is congealed from the sea-water (for I must allow it two origins) is flat and even, hard, opake, resembling white sugar, and incapable of being slid on like the British ice. The greater pieces, or fields, are many leagues in length; the lesser, are the meadows of the seals, on which these animals, at times, frolic by hundreds. The motion of the lesser pieces is rapid as the currents; the greater, which are sometimes two hundred leagues long and sixty or eighty broad, move slow and majestically; often fix for a time immoveable by the power of the ocean, and there produce, near the horizon, that bright white appearance called by mariners the *blink of the ice.* The approximation of two great fields produces a most singular phenomenon. It forces the lesser (if the term can be applied to pieces of several acres square) out of the water, and adds them to their surface. A second and often a third succeeds; so that the whole form an aggregate of tremendous height. These float in the sea, like so many rugged mountains; and are sometimes five or six hundred yards thick; but the far greater part is concealed beneath the water. These are continually increased in height by the freezing of the spray of the sea, or of the melting of the snow which falls

on them. Those which remain in this frozen climate, receive continual growth; others are gradually wafted by the northern winds into southern latitudes, and melt by degrees by the heat of the sun, till they waste away, or disappear in the boundless element.

"The collision of the great fields of ice in the high latitudes, is often attended with a noise that for a time takes away the sense of hearing any thing else; and the lesser, with a grinding of unspeakable horror. The water which dashes against the mountainous ice, freezes into an infinite variety of forms, and gives the voyager ideal towers, streets, churches, steeples, and every shape that imagination can frame.

"The icebergs or glaciers of the north-east of Spitzbergen, are among the capital wonders of the country; they are seven in number, but at considerable distances from each other. Each fills the valley for tracts unknown, in a region totally inaccessible in the internal parts. The glaciers of Switzerland seem contemptible to these, but present often a similar front in some lower valley. The last exhibits, over the sea, a front three hundred feet high, emulating the emerald in colour. Cataracts of melted snow precipitate down various parts, and black spiring mountains, streaked with white, bound the sides, and rise crag above crag, as far as eye can reach in the back ground. At times immense fragments break off, and tumble into the

water with a most alarming dashing. Frost sports also with these icebergs, and gives them majestic as well as other most singular forms. Masses have been seen assuming the shape of a gothic church, with arched windows and doors, and all the rich tracery of that style, composed of what an Arabian tale would scarcely dare to relate, of crystal of the richest sapphirine blue; tables with one or more feet; and often immense flat-roofed temples, like those of Luxor on the Nile, supported by round transparent columns of cærulean hue, float by the spectator. The snow of these high latitudes is as singular as the ice; it is first small and hard as the finest sand; changes its form to that of an hexagonal shield; into the shape of needles, crosses, cinquefoils, and stars plain and with serrated rays. Their forms depend on the disposition of the atmosphere; and in calm weather it coalesces and falls in clusters."

In treating of the different varieties of the bear, Pennant gives a very amusing account of the manner in which the arctic tribes hunt these animals, and of certain superstitious customs which they observe on these occasions. "In all savage nations the bear has been an object of veneration. Among the Americans, a feast is made in honour of each that is killed. The head of the beast is painted with all colours, and placed on an elevated spot, where it receives the respects of all the guests, who celebrate in songs the praises of the bear. They

cut the body in pieces, and regale on it, which concludes the ceremony.

"The chase of these animals is a matter of the first importance, and never undertaken without abundance of ceremony. A principal warrior first gives a general invitation to all the hunters. This is followed by a most serious fast of eight days, a total abstinence from all kinds of food; notwithstanding which, they pass the day in continual song. This they do to invite the spirits of the woods to direct them to the places where there is abundance of bears. They even cut the flesh in divers parts of their bodies, to render the spirits more propitious. They also address themselves to the *manes* of the beasts slain in preceding chases, as if it were to direct them in their dreams to plenty of game. One dreamer alone cannot determine the place of the chase; numbers must concur, but as they tell each other their dreams, they never fail to agree;—whether that may arise from complaisance, or by a real agreement in the dreamers, from their thoughts being perpetually turned on the same thing.

"The chief of the huntsmen gives a great feast, at which none dares to appear without first bathing. At this entertainment they eat with great moderation, contrary to their usual custom. The master of the feast alone touches nothing; but is employed in relating to the guests ancient tales of wonderful feats in former chases; fresh invocations

to the manes of the deceased bears conclude the whole. They then sally forth amidst the acclamations of the village, equipped as if for war, and painted black. Every able hunter is on a level with a great warrior; but he must have killed his dozen great beasts before his character is established; after which his alliance is as much courted as that of the most valiant captain. They then proceed on their way in a direct line; neither rivers, marshes, nor any other impediments stop their course; driving before them all the beasts which they find in their way. When they arrive at the hunting ground, they surround as large a space as their company will admit, and then contract their order; searching, as they close in, every hollow tree, and every place fit for the retreat of the bear; and continue the same practice till the time of the chase is expired.

"As soon as a bear is killed, a hunter puts into its mouth a lighted pipe of tobacco, and blowing into it, fills the throat with smoke, conjuring the spirit of the animal not to resent what they are going to do to its body, nor to render their future chases unsuccessful. As the beast makes no reply, they cut out the string of the tongue, and throw it into the fire. If it crackles and runs in (which it is almost sure to do), they accept it as a good omen; if not, they consider that the spirit of the beast is not appeased, and that the chase of the next year will be unfortunate.

"The hunters live well during the chase, on provisions which they bring with them. They return home with great pride and self-sufficiency, for to kill a bear forms the character of a complete man. They again give a great entertainment, and now make a point to leave nothing. The feast is dedicated to a certain genius, perhaps Gluttony, whose resentment they dread, if they do not eat every morsel, and even sup up the very melted grease in which the meat was dressed. They sometimes eat till they burst, or bring on themselves some violent disorders. The first course is the greatest bear they have killed, without even taking out the entrails or stripping off the skin, contenting themselves with singeing it, as is practised with hogs.

The Kamtschatkans, before their conversion to Christianity, had almost similar superstitions respecting bears and other wild beasts. They entreated the bears and wolves not to hurt them in the chase; and whales and marine animals, not to overturn their boats. They never call the two former by their proper names, but by that of *Sipang*, or ill-luck. At present the Kamtschatkans kill the bear and other wild beasts with guns; formerly they had variety of inventions, such as filling the entrance to its den with logs, and then digging down upon the animal and destroying it with spears. In Siberia, it is taken by making a trap-fall of a great piece of timber, which drops and crushes it to death; or by forming a noose on a rope fastened

to a great log. The bear runs its head into the noose, and finding itself engaged, grows furious, and either falls down some precipice and kills itself, or wearies itself to death by its agitations.

"The killing of a bear in fair battle, is reckoned as great a piece of heroism by the Kamtschatkans, as it is with the Americans. The victor makes a feast on the occasion, and regales his neighbours with the beast; then hangs the head and thighs about his tent by way of trophies. These people use the skins to lie on, and for coverlets; also for bonnets, gloves, collars for their dogs, and soles for their shoes, to prevent them slipping on the ice. Of the shoulder blades they make instruments (scythes) to cut the grass; of the intestines, covers for their faces to protect them from the sun during spring; and the Cossacks extend them over their windows instead of glass. The flesh and fat are among the chief dainties of the country.

"Superstitions relative to this animal, did not confine themselves to America and Asia; but spread equally over the North of Europe. The Laplanders held it in the greatest veneration; they called it the 'Dog of God,' because they esteemed it to have the strength of ten men, and the sense of twelve. They never presume to call it by its proper name, lest it revenge the insult on their flocks, but style it *muedda-aigia*, or the old gentleman in a furred cloak. The killing of a bear is reckoned a great exploit. The Laplanders bring home the slain

beasts in triumph; they erect a new tent near their former dwelling, but never enter it till they have flung off the dress of the chase. They continue in it three entire days, and the women keep at home the same space. The men dress the carcase of the bear in the new tent, and make their repast, giving part to the females; but take great care never to bestow on them a bit of the rump. Neither will they deliver to them the meat through the common entrance of the hut; but through a hole in another part. In sign of victory, the men sprinkle themselves with the blood of the beast. After they have finished eating the flesh, they bury the bones with great solemnity, and place every bone in its proper position, from a firm persuasion that the bear will be restored, and reanimate a new body.

"All who have tasted the flesh of this animal, say that it is most delicious eating. A young bear fattened with the autumnal fruits, is a dish fit for the nicest epicure. It is wholesome and nourishing, and resembles pork more than any other meat. The tongue and the paws are esteemed the most exquisite morsels; the hams are also excellent, but apt to rust, if not very well preserved. Four inches depth of fat has been found on a single bear, and fifteen or sixteen gallons of pure oil melted from it. The fat is of a pure white, and has the singular quality of never lying heavy on the stomach, notwithstanding a person drank a quart of it. The Americans make great use of it for frying their

fish; it is besides used medicinally, and found very efficacious in rheumatic complaints, aches, and strains*."

The only other passage we shall give from the Arctic Zoology, is a curious and somewhat romantic description of the habits of the ursine seal, which are found in vast multitudes in the islands between Kamtschatka and America, but are scarcely known to land on the Asiatic shore. "They live in families; every male is surrounded by a seraglio of from eight to fifty females; these he guards with the jealousy of an eastern monarch. Each family keeps separate from the others, notwithstanding they lie by thousands on the shore. Every family, with the unmarried and the young, amounts to about 120. They also swim in tribes, when they take the sea. The males show great affection towards their

* In England, the polar bear became part of the royal menagerie as early as the reign of Henry III. Mr. Walpole has proved how great a patron that despised prince was of the arts; it is not less evident that he extended his protection to Natural History. We find that he had procured a white bear from Norway, whence it was probably imported from Greenland; the Norwegians having possessed that country some centuries before that period. There are two writs extant from that monarch, directing the Sheriff of London "to furnish sixpence a-day to support our white bear in our Tower of London; and to provide a muzzle and iron chain to hold him, when out of the water; and a long and strong rope to hold him when he was fishing in the Thames." Fit provision was made, at the same time, for the King's elephant.

young, and equal tyranny towards the females. The former are fierce in the protection of their offspring; and should any one attempt to take their cub, will stand on the defensive, while the female carries it away in her mouth. Should she happen to drop it, the male instantly quits its enemy, falls on her, and beats her against the stones till he leaves her for dead. As soon as she recovers, she crawls to his feet in the most suppliant manner, and washes them with her tears; he, at the same time, actually insults her misery, stalking about in the most insolent manner. But if the young is entirely carried off, he melts into the greatest affliction, likewise sheds tears, and shows every mark of deep sorrow. It is probable that as the dam brings only one or at most two cubs, he feels his misfortune the more sensibly.

"Those animals which are destitute of females, through age or infirmity, or are deserted by them, withdraw themselves from society, and grow excessively splenetic, peevish, and quarrelsome; are very furious, and so attached to their ancient stations, as to prefer death to the loss of them. They are enormously fat, and emit a most nauseous and rank smell. If they perceive another animal approach their seat, they are instantly roused from their indolence, snap at the encroacher, and give battle. During the fight, they insensibly intrude on the station of their neighbour; this creates new offence, so that at length the civil discord spreads through

the whole shore, attended with hideous growls, their note of war. They are very tenacious of life, and will live a fortnight after receiving such wounds as would soon destroy any other animal.

"The particular cause of disputes among these irrascible animals are the following:—The first and greatest is when an attempt is made to seduce any of their mistresses, or a young female of the family. A battle is the immediate consequence of the insult; the unhappy vanquished instantly loses his whole seraglio, who desert him for the victorious hero. The invasion of the station of another, gives rise to fresh conflicts; and the third cause is the interfering in the disputes of others. The battles they wage are very tremendous; the wounds they inflict, very deep, like the cut of a sabre. At the conclusion of an engagement, they fling themselves into the sea to wash off the blood.

"Besides their notes of war, they have several others; when they lie on shore, and are diverting themselves, they low like a cow; after victory, they chirp like a cricket; on a defeat, or after receiving a wound, mew like a cat. Common seals and sea otters stand in great awe of these animals, and shun their haunts. They, again, are in equal awe of the leonine seals, and do not care to begin a quarrel in their sight, dreading the intervention of such formidable arbitrators, who likewise possess the first place on the shore. The great old animals are in no fear of mankind, unless they are suddenly sur-

prised by a loud shout, when they will hurry by thousands into the sea, swim about, and stare at the novelty of their disturbers. When they come out of the water, they shake themselves, and smooth their hair with their hind feet; apply their lips to those of the female, as if they meant to kiss them; lie down and bask in the sun with their hind legs up, which they wag as a dog does his tail; sometimes roll themselves up into a ball and fall asleep. Their sleep is never so sound but they all awake by the least alarm, for their sense of hearing, as also that of smelling, is most exquisite."

In concluding this Memoir of the Life and Writings of Pennant, it would be an omission not to acknowledge the obligations which his indefatigable labours conferred on Natural History. His Arctic Zoology was originally intended to embrace the History of Animals in the Northern parts of America, which at that time were connected with Great Britain. With that view he had commenced collecting materials; and by dint of great industry, and the contributions of various correspondents, including the most eminent Naturalists both in this and other countries, he had made far greater progress in his undertaking than he could have anticipated. Meantime, however, the American States declared their independence of Britain; and this circumstance so far interrupted the original plan, that, as the author says, " I could no longer support my claim of entitling myself its (North America) humble Zoolo-

gist; yet, unwilling to fling away all my labours, do now deliver them to the public under the title of the Arctic Zoology." In winding up his task, Pennant concludes with the following remarks, which are worthy of being recorded, as equally honourable to his enthusiasm in the cause of physical science, and to the amiable modesty with which he estimates his own exertions:—"I have now done as much as the lights of my days have furnished me with. In some remote age, when the British offspring shall have pervaded the whole of their vast Continent (North America); or the descendants of the hardy Russians colonized the western parts, from their distant Kamtschatka—the road in future time to new conquests; after, perhaps, bloody contests between the progeny of Britons and Russians about countries to which neither have any right; after the deaths of thousands of claimants, and the extirpation of poor natives by the sword and new-imported diseases;—then a quiet settlement may take place, civilization ensue, and the arts of peace be cultivated;—then may learning, the luxury of the soul, diffuse itself through the nation, and some Naturalist arise, who, with spirit and abilities, may explore each boundary of the ocean which separates the Asiatic and American Continents;—may render certain what I can only suspect; and by his observations on the feathered tribes, their flights and migrations, give utility to mankind, in moral and economical operations, by

inquiries which the ancients knew well to apply to the benefit of their fellow-creatures. He may, perhaps, smile on the labours of the Arctic Zoologist (if by that time they are not quite obsolete); and, as the animate Creation never changes her course, he may find much right; and if he is endowed with a good heart, will candidly attribute the errors to misrepresentation, or the common infirmity of human nature."

ORNITHOLOGY.

NATURAL HISTORY OF HUMMING-BIRDS.

Like Fairy Sprites, a thousand birds
Glance by on golden wing,
Birds lovelier than the lovely hues
Of the bloom wherein they sing.

In our first volume, devoted to the illustration of a portion of this splendid tribe of birds, we endeavoured to collect all the information contained in the numerous voyages of discovery, and the expensive and elegant works which have been devoted to their natural history *. It cannot, therefore, now be expected that we have discovered many additional facts regarding their curious habits and economy. But in our farther researches, we have been led more and more to wonder at the brightness of their external covering, and to admire the wisdom which has so admirably adapted the structure to the wants of

* The best work, describing the Humming-birds, is three beautiful volumes by Lesson, containing 219 plates, most delicately executed.

these frail and shining beings. In the present volume we have given descriptions of most of the birds which have been satisfactorily established, and trust that the young Ornithologist will thus be enabled to determine the greater number of those which may come under his observation; these, as far as possible, follow a plate somewhat representing the particular form. At the conclusion, we have given a condensed Synopsis of the species, mentioning with each the modern genus in which it has been placed. An arrangement of the genera is not now attempted; for it is not yet very clearly established how these genera should stand, even by those who have had opportunities of seeing the greater part of the family together—and we are not surprised at this, when we look at the almost infinite variety of form which is assumed among them. They will one day constitute a most useful illustration of the natural system, strikingly representing forms in the other divisions of the great class to which they belong.

When alluding to the splendid plumage and singular feathered appendages of the males, we did not mention that we conceived it peculiar to the season of incubation. In many of those which are described as the young, before the brilliant plumage has been attained, we consider that it is from the difference of season, not of age, that this takes place; and instead of being called the adult plumage, it should rather obtain the name of the nuptial dress. We believe a change takes place in the plumage of all birds

at the beginning of spring, or at the time when the business of reproduction commences. This is marked either by a greater brilliancy, or by the appearance of rich ruffs, crests, or some additional appendage of the skin or feathers. After the first months of the love season have passed, these are lost, and at the autumnal moult, the plumage is thickened, and commences the preparation for a sufficient clothing in winter, and a display of splendour for the ensuing spring.

Among our native birds, we have constant and familiar examples of this, though perhaps they are not always noticed. The Chaffinch loses the brown tips to the feathers on his crown, and they become a rich and beautiful blue; the Linnet those of his breast, which assume a lovely crimson tint. The Snow Bunting, so common on the wild moors during winter, from a pleasing brown changes to a pure black and white. The Heron and Lapwing gain their beautiful crests, the former his pendent breast-feathers, and the Egrets receive their valuable ornaments. The numerous tribes of Bustards, Plovers, and Sandpipers, are some of the most remarkable for the distinct variation of their colours. The lower parts of the males, in almost all the species of the two first groups, assume a deep and glossy black while in the Sandpipers, bright shades of chestnut brown are the emblems that the season of incubation has commenced, and in one singular instance, the variable ruff reminds us of the Ruff-necked Humming-birds. Among the web-footed water-fowl we

have similar changes. The common black headed Gull gains its soft and chaste looking cowl; the Teal, Wild Drake, and Goosander, their glossy heads; the Divers, the curious markings of their throats; the Grebes the lengthened fringes which spring from their cheeks or auricular feathers; and instances of the change of colour, or increased brilliancy of the skin, may be mentioned in the naked space surrounding the eye of the Pheasant, the skin above the eyes of the various Grouse, and the forehead of the Coot and Water-Hen. Many other common instances might be given from our own well-known birds; and the inhabitants of other climes will present many still more singular, though none perhaps so splendid, as the temporary adornments of Humming-birds.

Regarding their manners during the breeding season, we may mention, in addition to what was related in the introductory chapter to the first volume, that both male and female sit by turns, and, on the authority of M. Drapiez, that there are two, three, and sometimes four broods in the year. This last fact will enable us better to account for the immense profusion of these little birds which are generally found together. Their nest seems to be built in a greater variety of shapes, and of more varied materials, than the compact and elegant structures which we see in collections, and which have been sent to this country, more from their beauty and neatness than for the sake of increasing our knowledge of their formation. The following remarks upon the manners of the

Ruby-crested Humming-bird, which describe its manner of building, I have copied from a letter received a few weeks since from my very active correspondent, Mr Kirk, resident in the island of Tobago. Speaking of the appearance of this species in that island, he says, "Thus the Ruby Humming-bird makes its appearance here on the 1st of February. Some say it is found in the leeward part of the island all the year; others, that it arrives earlier by a month than to the windward; the latter I think more probable. Certain I am, that there is no individual in the island who takes so much exercise in the woods as I do; and I can positively say, that since the 1st of August last, and perhaps some time previous, until the 1st of February, I have not seen one of these birds; and now (1st March) they are abundant. They begin to make their nest about the 10th of February. I now know of several containing two eggs each, and watched one yesterday for nearly an hour. Her manner of construction was very ingenious: bringing a pile of small grass or lichen, she commenced upon a small twig, about a quarter of an inch in diameter, immediately below a large leaf, which entirely covers and conceals the nest from above, the height from the ground being about three feet. After the nest had received two or three of these grasses, she set herself in the centre, and putting her long slender beak over the outer edge, seemed to use it and her throat much in the same way as a mason does his trowel, for the pur-

pose of smoothing, rubbing to and fro, and sweeping quite round. Each visit to the nest seemed to occupy only a couple of seconds, and her absence from it not more than as many minutes. In a few hours after I saw the nest, which had all the appearance of a finished one. I expect to find an egg there to-day."

In conclusion to the history of the economy of these birds, as far as our present information reaches, we add their description by a modern poet, a native of one of their own fair isles.

"Still sparkles here the glory of the west,
Shews his crowned head, and bares his jewelled breast,
In whose bright plumes the richest colours live,
Whose dazzling hues no mimic art can give.
The purple amethyst, the emerald's green,
Contrasted mingle with the ruby's sheen;
While over all a tissue is put on
Of golden gauze, by fairy fingers spun.
Small as a beetle, as an eagle brave,
In purest ether he delights to lave;
The sweetest flowers alone descends to woo,
Rifles their sweets, and lives on honey-dew.
So light his kisses, not a leaf is stirred
By the bold, happy, amorous Humming-bird;
No disarray, no petal rudely moved,
Betrays the flower the collibree has loved."

PLATE I.

TROCHILUS ANAIS.

[Blue-bellied Star-billed Humming-Bird]

TROCHILUS ANAIS.

(Blue-bellied saw-billed Humming-Bird.)

Lizars sc.

DESCRIPTIONS

BLUE-BELLIED SAW-BILLED HUMMING-BIRD*.

Trochilus thalassinus.—SWAINSON.

PLATES I. and II.

Trochilus thalassinus, *Philosophical Magazine* for 1827.—L'Anaïs, *Lesson, Histoire Naturelle des Oiseaux-mouches. Supplement*, p. 104. pl. ii.—Ramphodon anaïs, *Lesson, Trochilidées*, p. 146. pls. lv. lvi. and lvii.

THIS very fine species has been figured in the beautiful work of Mr Lesson, now completed, from which we have borrowed so largely for the illustrations of the present volume. That naturalist places it in his genus *Ramphodon*, with which it agrees in the structure of the bill. In other respects, however, it presents remarkable differences. What we have considered the type of Lesson's genus has the form and colouring of the genus *Pœthornus*, and the under mandible, as in that form, sheaths itself, when closed, within the upper. The tail is also very much graduated. In the present species, we have the form of the wings and tail nearly as in the Mango Hum-

* The Figures in this volume are of the natural size, except where otherwise mentioned. † Pl. i. vol. i.

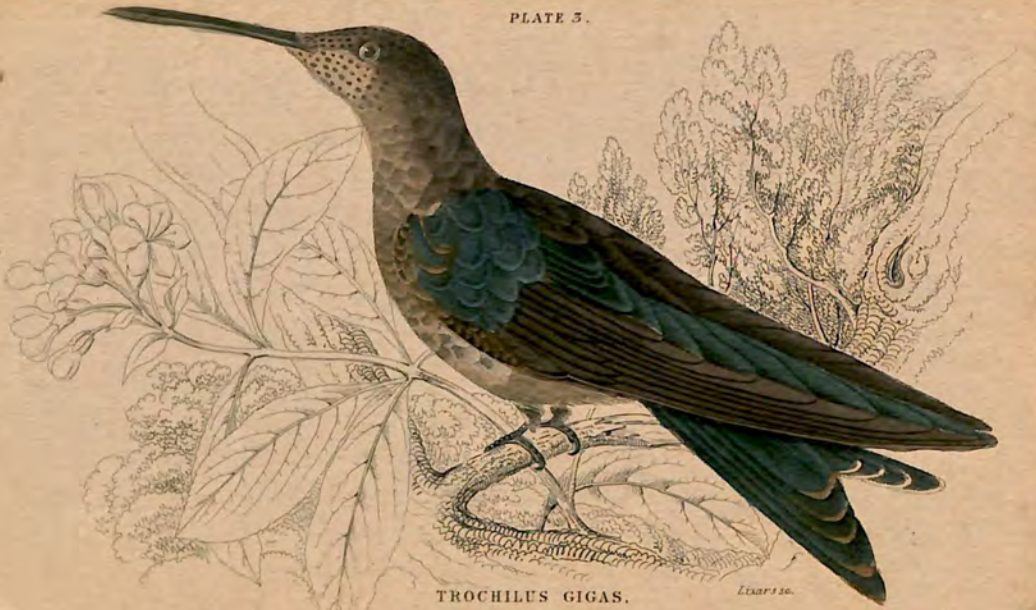
ming-bird, while the scaly feathers of the throat reminds us of *T. mesalucus*, and the rich splendour of the plumage differs much from the sober browns of the Spotted Saw-bill. We make these observations with every deference to M. Lesson's opinion. They occurred to us when looking over his illustrations.

The Blue-bellied Saw-bill is a native of Mexico, where it is accounted rare. It is in total length about five inches. In the full plumage of the adult, the general colour is a deep-green, with a golden metallic lustre. The fore part of the neck is clothed with thick feathers, changing with the light from an emerald-green with golden reflections, to a blackish-green and deep velvet-black. The throat, and bordering the dark centre of the neck, is a mild but rich azure-blue, which is stretched upon the cheeks, and is lost in forming auricular tufts of the same colour. The plumes composing this ornamental part are of a scaly form. The centre of the belly is of the same rich colour, forming a large longitudinal patch, which seems to vary in its size and breadth in different specimens. The tail has a steel-blue lustre, and is crossed with a deep indigo band, a short way from the tip. Our first Plate represents a bird in this state. In Plate second the rich blue feathers on the cheeks and belly have not appeared, and the whole plumage has a greater tinge of steel-blue and purple. The bill and feet are black.

In a young bird, or more probably the female, Lesson has represented and described the flanks and

vent of a dirty grey, mingled with green ; the under tail-coverts reddish-white, without any of the rich blue patch on the belly.. The auriculars appeared of equal richness, and the upper parts were of the same steel-blue as in our second plate.

PLATE 3.



TROCHILUS GIGAS.

(Gigantic Humming-Bird.)

GIGANTIC HUMMING-BIRD *.

Trochilus gigas.—VIEILLOT.

PLATE III.

Oiseau-mouche géant; Trochilus gigas, *Vieillot, Gallerie du Museum*, plate 180.—L'Oiseau-mouche Patagon; Ornismya tristis, *Lesson, Histoire Naturelle des Oiseaux-mouches*, p. 43. pl. iii.

AMONG the delicate tribe of birds which we have been endeavouring to describe, we have seen those only of splendid plumage, of small size and slender proportions. That to which we have devoted the annexed plate, is a remarkable contrast: it is of dull plumage, and of a strength much greater than any of the others. It is the largest Humming-bird which has been yet discovered, and has been accordingly denominated "Le Patagon," and "Oiseau-mouche géant."

The length of this bird is nearly eight inches: the crown, back, the under and lesser wing-coverts, brownish-green, with reflections of the latter tint; the under parts are light reddish, mingled with a deeper tint, and shaded with greenish on the flanks;

* This figure is considerably reduced.

the feathers are generally darker at the base, and the paler tips give a slightly waved appearance to the breast and belly: on the throat, the feathers, though without lustre, retain the scaly form and texture of the more brilliant species. The wings slightly exceed the tail in length, bend up at the tips, and exhibit all the form of the most correctly formed organ of flight; they are of a uniform brownish-violet. The tail is composed of ten feathers, of a brownish colour, and with golden-green reflections; they gradually decrease in length, making the tail deeply forked. This is nearly the description of the birds which have hitherto been described as adult males. The females and young are represented to differ, by the feathers on the upper parts and wing-coverts being each bordered with pale rufous, and by those on the breast and belly being tipped with white; the vent and lower tail-coverts are pure white. In Vieillot's plate, the quills and tail feathers have each a spot of white at the extremity.

The first specimen which we saw of this bird was brought by Lord Byron, from the expedition of the Blonde to Chili, and it agreed nearly with the female figured by Vieillot. It is yet a very rare species, and few are to be seen in the collections of Britain. It inhabits the forests in the interior of Chili: it reaches the country of the *Auracanas*, and extends to the base of the Andes. No specimens have yet been brought from Brazil, which was at first thought to be their abode.

In the arrangement of Lesson, this species is placed at the commencement, under the title of *Les Patagons*. This division contains it as a solitary species, and he characterizes it by the tail, lengthened, deeply forked, but seems to lay too much stress on the dull colouring of the plumage.

TROCHILUS CŒLIGENA.

(Purple Humming Bird.)

Lizars sc.

PURPLE HUMMING-BIRD.

Trochilus cœligena.—LESSON.

PLATE IV.

La Cœligene; Ornismya cœligena, *Lesson, Trochilidées*, p. 141. pl. liii.

LESSON's beautiful plate has served us for the illustration of this species, remarkable no less for its beauty than for its rarity, and the unusual tint which the plumage assumes. The only specimen which has come under his observation is one which he received from M. Florent Prévost, to whom it was sent from Mexico.

The general tint of the plumage of this bird is purple, possessing the changing hues so common in the family; and above, it varies from a rich violet to a brilliant and sparkling red, while below, it is tempered in the shade with a chaste and beautiful grey. The whole upper parts are of this rich purplish-red, but the feathers are banded with a darker and paler shade, without so much metallic lustre, and the plumage of the lower part of the back and tail-coverts assumes a golden greenish lustre, the only part of the plumage where this colour, so general, is seen. On the throat and breast, the feathers are of a deli-

cate grey, darker in the centres. The vent is nearly white. The tail is very ample, and is slightly forked: the feathers are very broad, and, with those of the wings, take the same peculiar purple tint which the plumage generally has infused or mixed with it, overpowering the common colours of the family.

The Purple Humming-bird is a large species, measuring more than five inches in length, and having the proportions relatively strong.

PLATE 5.

TROCHILUS STOKESII.

(Stoke's Humming-Bird)

Lizars sc.

STOKE'S HUMMING-BIRD.

Trochilus Stokesii.—KING.

PLATE V.

Trochilus Stokesii, *Capt. King, Proccedings of Zoologica. Society*, p. 36.—Le Stokes, *Lesson, Trochilidées*, p. 135. pl. 1.

THIS most splendid species was discovered by Captain King on the island of Juan Fernandez, thus adding another species to those already known to inhabit that remote land.

It is perhaps one of the most beautiful of the race, and combines at the same time great delicacy of colouring. The length is about four inches and a half: the crown is clothed with scaly feathers of a brilliant blue, changing in some lights to violet, and forming a lengthened and rounded crest behind. The upper part of the body is a bright emerald-green; the shoulders of the same colour: the tail has the two centre feathers entirely of the same green, the others pure white on the inner webs, green on the outer, except the first, which has the basal half of the outer web white also. The cheeks are of a dark purplish-green, with small round spots of a pink or violet colour, according to the light in

which they are seen; and the under parts are pure white, except on the throat, which is tinged with green. All over the white are round ocellated spots, of a rich golden-green, appearing very dark in some lights, and everywhere beautifully relieved upon the snowy white. The wings are of the same colour with its congeners.

Upon examining Plate XII. of our first volume, it will be seen that the *T. sephanoides* and this bird will rank together, and are indeed the only species possessing the form and markings peculiar to them. The feathers on the crown are broad and lengthened, and form a splendid cowl. In this they somewhat resemble the birds on our next plate, except that the cowl is terminated by the feathers decreasing in breadth, and finally ending in a long point The tail is very ample, and in both, the lower parts of the body are spotted—a marking at variance with the other species, and as yet confined to very few. In *T. sephanoides*, although the marking runs in spots, the imbricated form is maintained, and the spots are neither so insulated or decided as in that now described. The bill affords another character, being remarkably slender towards the point, and perfectly straight; and the feathers on the forehead extend quite upon the nostrils.

PLATE 6.

TROCHILUS LODDIGESII.

[Loddiges's Humming-Bird]

Ainsley sc.

LODDIGES'S HUMMING-BIRD.

Trochilus Loddigesii.—GOULD.

PLATE VI.

Trochilus Loddigesii, *Gould, Proceedings of Zoological Society.*—L'Oiseau-mouche de Loddiges, *Lesson, Trochilidées*, p. 138. pl. li.

IN our description of De Lalande's Humming-bird, Plate X. of Vol. I., we mentioned the discovery of a second species of this form, very nearly allied to it. We have now given a representation of it.

The principal distinctions are the longer bill, the less size of the white behind the eyes, and the more lilac tinge of the long and slender crest, which wants also the white tip. A comparison of the two plates will, however, best point out the differences. The present species was first noticed by Mr Gould, and characterized by him in the proceedings of the Zoological Society of London, under the above name—a well merited compliment.

The whole crest is a brilliant blue, with purple reflections. The upper parts of a golden-green. A spot of white is placed immediately behind the eye, and the whole of the under parts are of the same

pure colour, marked with a longitudinal patch of deep black along the centre. The tail is steel-blue for two-thirds of the basal half, the tip is white.

This lovely species is a native of Brazil. We have no mention of the female being yet discovered.

PLATE 7.

TROCHILUS DELALANDII. female.

(Delalande's Humming-Bird.)

DELALANDE'S HUMMING-BIRD.

Trochilus Delalandii.—VIEILLOT.

PLATE VII.—FEMALE.

Le Plumet bleu; Ornismya Delalandii, *Lesson, Histoire Naturelle des Oiseaux-mouches*, pl. xxiv.

WE did not think the illustration of this beautiful little group complete without a representation of a Female. The whole upper parts are of the golden-green exhibited by the male; but we lose every trace of the splendid crest which adorns his crown. The white spot behind the eye and the deep blue upon the tail remains. The under parts are of a rich smoke-grey, of a chaste and pleasing tint.

The Male was represented in our first Volume, Plate X.

EVEN-TAILED AMETHYSTINE HUMMING-BIRD.

Trochilus orthura.—Lesson.

PLATE VIII.

L'Amethyste à queue égale: Ornismya orthura, *Lesson*, *Trochilidées*, p. 85, pls. xxviii. and xxix.

There are three Humming-birds, which, though not coming in the same group, we shall now introduce together, from a confusion seeming to have arisen in the discrimination of the species. They are generally known under the name of the "Amethysts," and Lesson proposes to distinguish them by the titles "L'Amethyste, Le petit Amethyste ou L'Amethystoide, et L'Amethyste à queue égale." The last, the subject of our plate, we shall first describe.

The length of this species is about two inches and a half: the head, neck, back, rump, and upper tail-coverts, are golden-green; two narrow lines of white spring from each corner of the mouth: the fore-part of the neck, and running upon the breast, is covered with a patch of scaly feathers, of a rich amethystine purple, changing to red with the position: this patch is surrounded with a broad band of greyish-white, which extends upwards upon the sides

TROCHILUS ORTHURA

(Fear-tailed Amethystine Humming-bird.)

of the neck in a crescent form, and this is again bordered with a band of deep brown, assuming a greenish tinge as it comes upon the back. The flanks and lower tail-coverts are deep cinnamon-red, and the centre of the belly is pure white, exhibiting a very marked contrast. The tail, in the form of which it differs so much from the other two, is ample, and perfectly square: the feathers are of a golden-green above, black at the ends, except the two on the outside, which are tipped with white.

In a young specimen figured by M. Lesson, the bright patch on the throat is nearly pure white, having the centre of the feathers slightly marked with a greenish tinge. It differs also in the centre of the belly, and under tail-coverts, being pure white, instead of the rich cinnamon of the adults.

M. Lesson has also figured the beautiful nest of this species: it is compactly built upon the sprig of a passion-flower, and is composed of cotton, fortified on the outside by lichens, and by slender roots.

This species is a native of Cayenne.—The next we shall mention has been found in the mountainous provinces of Brazil: it is the

LITTLE AMETHYSTINE HUMMING-BIRD.

Trochilus amethystoides.—LESSON.

Le petit Amethyste: Ornismya amethystoides, *Lesson*, *Trochilidées*, pls. xxv. xxvi. and xxvii.

THIS species Lesson thinks different from that represented on the following plate, and apparently with reason. It is scarcely more than two inches and a half in length: the upper parts are golden-green, with blue reflections; the throat and fore part of the neck are of a rich reddish amethyst colour, whereas in the *T. amethystinus* it is of a pure and brilliant violet. A collar of clear grey follows this beautiful patch, which gradually passes into the shades of the under parts. The tail is ample, and deeply forked.

In the young assuming the perfect plumage figured by Lesson, the tail is rather rounded than forked, and the whole plumage is of a deep and sombre shade, relieved by the white which occupies the place of the amethystine patch, by a white crescent on the breast, and a band of the same colour crossing the rump. In the succeeding plate of the young, the likeness to the other representations is scarcely recalled; the upper parts are of a chaste reddish-brown, tinged with green on the head, and

without any trace of the white band on the rump; the tail is rounded at the end, and is dark olive-brown, the centre feathers having a greater tinge of green than upon the others, the whole are tipped with a narrow band of the same colour with the upper parts. The throat and fore part of the neck are white, interspersed with the young scaly brightly coloured feathers; and the belly and vent are pale reddish-brown, having a slight indication of the crescent band. In all the young species, the wings reach to about the middle of the tail; and it is a curious circumstance, that, in the adults, it should assume a deeply forked shape, and that the young feathers should appear in the very reverse form. — The next bird belonging to the "Amethysts," is the

AMETHYSTINE HUMMING-BIRD.

Trochilus amethystinus.—LINNÆUS.

PLATE IX.

Trochilus amethystinus, *Linnæus.*—Amethystine Humming-Bird, *Latham, General History of Birds*, vol. iv. p. 357.—Oiseau-mouche amethyste, *Buffon.—Lesson, Histoire Naturelle des Oiseaux-mouches, and Supplement*, pls. lxvii. xx. xxi. xxii.

THIS long known but beautiful species Lesson has represented on no less than four Plates, exhibiting different states of plumage, all of which we shall endeavour to make use of to render the present description as perfect as possible. The colours of the adult are simple, the upper parts are of a fine golden green, the lower grey, and the throat is adorned by the amethystine patch from whence the name is derived. The colour of the amethyst must be familiar to most persons, and to say that it resembles it, will convey the best idea of its beauty. It is surrounded on the lower part with a light grey crescent.

In the adult the tail is deeply forked, the outward feathers being narrow and slender.

In the Plates representing the birds assuming the adult plumage, those parts which shew the amethystine tints are pure white, the feathers in this state

PLATE 9.

TROCHILUS AMETHYSTINA.

(Amethystine Humming-Bird)

exhibiting no appearance of a scaly form, and a few violet feathers are represented appearing. The plumage is a little duller in shade, and the tail has not reached the greatest development of the fork; but the white band is conspicuous, running over upon the back.

In the very young state, the tail is like that of those allied birds just described, rounded, with pale tips, the colour dark. The upper parts are a pale golden green. The patch on the throat is pure white, running into the crescent-shaped band, and the vent and belly are reddish-brown.

This species is a native of the north parts of Guiana and Brazil, and, though long known, is by no means common in modern collections. The next bird we shall mention as allied to this is the

RUBY-THROATED HUMMING-BIRD.

Trochilus rubineus.—LINNÆUS.

Trochilus rubineus, *Linnæus.*—L'Oiseau à gorge rouge du Brazil, *Buffon.*—Ruby-throated Humming-Bird, *Latham, General History of Birds*, iv. p. 342.—L'Oiseau mouche rubis, Ornismya rubinea, *Lesson, Histoire Naturelle des Oiseaux-mouches*, pls. xliv. xlv. and xlvi.

THIS very splendid species has been described by authors under various names, in the states from young to adult plumage. We shall endeavour to point out its marking in the different liveries.

The adult male is above four inches in length; the whole of the covering of the body, except the throat, is of a very dark uniform golden green, brightest on the front of the breast, and on those parts where the feathers are scale-formed, on the lower part of the vent it is tinged with brown. The throat is adorned with a patch of very splendid ruby colour, assuming golden reflections; the wings are brownish purple, inclining to green on the shoulders, and the tail, which can scarcely be said to have any fork, is of a bright cinnamon red, with a narrow band of black at the tip; the under coverts are of the same colour.

The female has the upper parts of a lively green, beneath fine reddish brown, shaded to grey on the vent, and without any trace whatever of the splendid patch on the throat; behind the eye there is a white spot, and a line of the same colour runs from the opening of the mouth to the auriculars. The colour of the tail is not so bright as in the male, and the centre feathers are tinged with green.

The young of the first year, according to Lesson, is brown above, with a golden greenish lustre; beneath, dull grey; the outer tail-feathers reddish, the next black, tipped with white, and the centre ones greenish-brown. In the second year it resembles the female, but there is a slight tinge of ruby colour on the throat. And in the third year, the brownish colour of the plumage still remains, but is more tinged with green, the patch on the throat is defined, and rich scaly feathers commence in parts to ap-

pear, and the tail is red. The young of this species, according to Lesson, would therefore appear to require the fourth summer to perfect their plumage, to attain the full perfection of all their organs.

The Ruby-throated Humming-Bird is a native of the Brazils. Species brought from that country by MM. Quoy and Gaimard, decided the before undetermined locality of the species.

WEDGE-TAILED AMETHYSTINE HUMMING-BIRD.

Trochilus montana.—Lesson.

L'Amethyste du Mexique, Ornismya montana, *Lesson, Trochilidées*, pls. liii. and liv.

This bird differs from those arranged under the title of amethysts, by the form of the tail, which is strongly wedge-shaped at the tip. It would seem, as far as we can judge from the representation of Lesson, to range nearer the Nootka Humming-Bird.

It is a native of Mexico; its length is about three inches. The upper parts of the plumage are of a clear and shining green, and a large patch of bright amethystine red covers the breast, and is bordered beneath by a band of pure white; the belly and vent are white, dashed with reddish on the flanks. The tail, of the form we have mentioned, has the centre feathers of a clear green, the lateral ones brown,

bordered with chestnut, and having a round whitish spot on the tip of each of the outer ones.

In the young, the throat wants the amethystine patch, and with the rest of the under parts is nearly white.

PLATE 10.

TROCHILUS LANGSDORFFII.

(Langsdorff's Humming-Bird.)

LANGSDORFF'S HUMMING-BIRD.

Trochilus Langsdorffii, VIEILLOT.

PLATE X.

Trochilus Langsdorffii, *Temminck, Planches Coloriées*, 66. fig. 1.—Le Langsdorff, *Lesson, Histoire Naturelle des Oiseaux-mouches*, pl. xxvi. Adult; pl. xvi. Young.

THIS beautiful species was discovered by M. Langsdorff, Russian Consul at Rio de Janeiro, to whom it was dedicated by the French ornithologists. It will also serve to recall, says Lesson, the companion of Krusenstern, in his voyage round the world.

It is most remarkable for the curious structure of the tail, and presents almost as great an anomaly in the form of the feathers, as the half-tailed Humming-Bird does in the number of them. It forms a complete and deep fork, but the feathers lengthen out and narrow to a perfect point, the outer one being almost three inches long. The upper parts are of a dull golden green of a uniform tint. The fore part of the breast and throat is covered with a patch of the same colour, but having beautiful reflections in different positions, and composed of the same scaly feathers which almost always occupy this space.

Beneath this is a crescent-formed band of bright orange, in some lights approaching to crimson, and which has much the appearance of a similarly coloured band frequent in the African Cyniridæ. This is relieved by the deep brownish violet of the belly, which again contrasts with the pure white of the vent and under tail-coverts, and completes a series of five distinct colours on the under surface of this beautiful little bird. The white of the vent is continued over the rump in a very narrow band, and there contrasts beautifully with the deep green.

The tail, we have said, is deeply forked; it consists of ten feathers. The six in the centre are deep blue, the two on each side, which run to the fine points, are nearly white.

In the young the tail does not assume a forked or lengthened appearance; but, like the birds which have been figured in the preceding plates, it is of a rounded form. The throat is nearly black, but the space occupied by the brilliant green patch is defined by a plumage of a greenish white, and little trace of the lower orange band is seen. The upper parts are of a duller green, and the tail is deep bluish black, having the tips of the outer feathers white.

Langsdorff's Humming-Bird is a native of Brazil; the female has not yet been described, and I believe specimens are yet unknown in Europe.

PLATE II.

TROCHILUS RUFUS.

(Ruff-necked or Nootka Humming-Bird.)

RUFF-NECKED OR NOOTKA HUMMING-BIRD.

Trochilus rufus.—GMELIN.

PLATE XI.

Trochilus rufus, *Gmelin, edition of Systema Naturæ of Linnæus.*—Ruff-Necked Humming-Bird, *Latham, General History of Birds*, vol. iv. p. 350.—Ruff-Necked Honey-Sucker, *Pennant, Arctic Zoology*, vol. ii. p. 177.—Selasphorus rufus, Nootka Humming-Bird, *Swainson, Northern Zoology*, vol. ii. p. 324.—*Lesson, Histoire Naturelle des Oiseaux-mouches*, pls. lxvi and lxvii, and Supplement, xi. xii. and xiii.

THE discovery of this splendid species is due to our great navigator Captain Cook, while for its first description we are indebted to the now venerable ornithologist of our present day. It is an inhabitant of the inhospitable climate of Nootka Sound, but ranges over a considerable extent, having been received from Real del Monte by Mr Swainson.

Captain Cook made the following observations, when mentioning this beautiful species.

"There are also Humming-Birds, which yet seem to differ from the numerous sorts of this delicate animal already known, unless they be a mere variety of the *Trochilus colubris* of Linnæus. These, perhaps, inhabit more to the southward, and spread northward

as the season advances; because we saw none at first, though, near the time of our departure, the natives brought them to the ships in great numbers."

The most accurate description we can insert is that from the Northern Zoology.

"General tint of the upper plumage rufous or cinnamon, which covers the head, ears, neck, back, rumps, upper tail, corners, and margins of the tail feathers; the crown and the wing covers, however, have a strong coppery greenish gloss, but which does not extend to the ears, the upper line above the eye, or to that between the eye and bill; the greater and lesser quills, and the middle of the tail feathers, with these tips, are all of a pale smoky brown, slightly glossed with violet. Under plumage; the whole of the chin and throat is covered with scale-like feathers of a fine looking colour and lustre, equally brilliant with the throat of *T. moschitus*, but with more of a red and less of an orange gloss; the tints, however, change in almost every direction of light, and in all are exquisitely splendid. The middle of the breast and vent are nearly pure white, but all the sides and the under tail covers are of the same colour as the back. Legs and feet dark brown. The female chiefly differs in being green gold, where the male is cinnamon; the throat being merely spotted with the glowing ruby colour of the male."

According to Dr Latham, "the female is green gold on the upper parts; instead of cinnamon on the throat, are only spots of the glowing ruby colour;

breast and vent as in the male; tail coverts green; tail as in the other sex; the two middle feathers of one colour, the rest with a white spot at the tips." In a specimen of a young female which Lesson has figured, the tail is only slightly rounded, having the outer feathers tipped with white; the upper parts are of a greyish green, and the lower part of the plumage is of a chaste grey, palest on the throat and vent."

Lesson has also given two representations of the young males. In these the bright scaly feathers of the throat are appearing, with the generally more vivid tints of the adult, but the tail assumes very little of its wedge-shaped form.

Mr Swainson forms from this bird his genus *Selasphorus*, which I believe would be before the institution of Lesson's title of Lophornis for the same group, and includes all those magnificent species having tufts of feathers issuing from the sides of the neck, of which the Tufted-necked Humming-Bird was so long the most familiar example; and also the *Trochilus platycercus*, which has been described in the Philosophical Annals, with a Synopsis of Mexican Birds; it is characterised as green above, beneath whitish; the chin and throat amethystine red, the tail rounded, with the four centre feathers very broad.

Vieillot's Humming-Bird will also range here, and we may now mention, that since the publication of our First Volume, another figure has been given by Lesson, in which the neck tufts are represented at

much greater length, and of a richer and more brilliant green. But of all the birds belonging to this splendid little group, one which M. Lesson has dedicated to Mr Gould of London, is the most exquisitely beautiful. We have represented it on the next plate.

PLATE 12.

TROCHILUS GOULDII.

(Gould's Humming-Bird.)

GOULD'S HUMMING-BIRD.

Trochilus Gouldii.—Lesson.

Plate XII.

L'Oiseau-mouche, *Gould.*—Ornismya Gouldii, *Lesson*, *Trochilidées*, p. 103, pl. xxxvi.

The native district of this splendid species is unknown. In size it is similar to the Tufted Necked Humming-Bird: the forehead, throat, and upper part of the breast, are of a most brilliant green, the feathers of a scaly form; from the crown springs a crest of bright chestnut feathers, of a lengthened form, and capable of being raised at pleasure; the back and upper parts are golden green, crossed upon the rump with a whitish band; the wings and tail are brownish purple, the latter having the centre feathers tinged with green; the lower parts are dark brownish green. The neck tufts are of the most splendid kind, and have a chaste but brilliant effect; they are composed of narrow feathers of a snowy whiteness, the tips of each having a round ocellated spot of bright emerald green, surrounded with a dark border; the longest are at the upper part of the tuft, and they decrease in length, assuming the

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shape of a butterfly's wing; shorter feathers again spring from the base, and their green tips are relieved on the white of the longer ones behind them.

There are specimens of this splendid species in the collection of Mr Loddiges.

PLATE 13.

TROCHILUS TRICOLOR.

(Tri-coloured Humming Bird.)

TRI-COLOURED HUMMING-BIRD.

Trochilus tricolor.—Lesson.

Plate XIII.

Le Tricolore, Ornismya tricolor, *Lesson, Histoire Naturelle des Oiseaux-mouches*, pl. xiv., and *Trochilidées*, pl. lx.

This species, also of great beauty, seems to be first described and figured by Lesson. It is about three inches in length. It appears to belong to that group where the throat is covered with feathers of a large size, and which can be expanded at the will of the bird. The bill is very slender, and is slightly curved. All the upper parts are of a brilliant golden green, tinged with brown on the forehead; the breast, belly, and under tail-coverts white, shading into green upon the flanks, and the throat and fore part of the neck is covered with rather large rounded scaly feathers of a brilliant carmine red, beautifully relieved by the white of the breast, and when expanded forming a ruff or collar. The tail is nearly equal at the end, but the feathers become narrow towards the tips, almost acuminated, which serves to distinguish it from those other species which have the throats adorned with an amethyst coloured patch. The centre feathers are tinged with

green, the others are of a deep steel-blue, having the inner webs bordered with chestnut-red. Two beautiful figures of this bird are given by Lesson, the one said to be from Mexico, the other from the Brazils.

Another lovely bird having a singular distribution of the plumes upon the neck, will be seen on our next Plate. The form of the tail, however, is very different, and the bill is distinctly curved from the base.

PLATE 14.

TROCHILUS CYANOPAGON.

(Blue-throated Humming-Bird.)

BLUE-THROATED HUMMING-BIRD.

Trochilus lucifer.—SWAINSON.

PLATE XIV.

Cynanthus lucifer, *Swainson, Synopsis of Mexican Birds.*—L'Oiseau-mouche barbe blue, Ornismya cyanopogon, *Lesson, Histoire Naturelle des Oiseaux-mouches,* p. 50, pl. v.

THIS lovely species seems to have been first noticed and described by Mr Swainson; consequently we have given his name at the head of this description, in preference to that of Lesson, which is engraved upon the Plate. The first specimens seem to have formed part of the collection of the Duke Rivoli in Paris, and several individuals have since been brought to this country. It is a native of Mexico. It is a bird of a very slender form; the upper parts are bright yellowish green, the under nearly pure white, tinged with greenish on the flanks, and the throat and fore part of the neck are covered with beautiful lengthened plumes of a bluish violet colour, assuming a pink or ultramarine tint according to the position. The tail is deeply forked, and the outer feathers become narrow towards the tips. The female has not yet been described.

From some allied species Mr Swainson has formed his group Cynanthus, but places this at the end as an aberrant species, from the curvature of the bill. This will stand as one of the five great divisions into which he would distribute the whole of the Trochilideæ.

PLATE 15.

TROCHILUS PETASPHORUS.

(Violet-tufted Humming-Bird.)

VIOLET-TUFTED HUMMING-BIRD.

Trochilus petasophorus.—NEUWIED.

PLATE XV.—FEMALE.

Oiseau-mouche pétasophore, female, *Lesson*, *Trochilidées*, pl. lix.

IN the description of the adult male of this beautiful species, plate xiii. of our first volume, we stated that the female was not well known. Lesson has since published a figure of that sex, also received from Brazil. The upper parts of the plumage are entirely of a very clear green, which on the throat, neck, and breast increases in brilliancy. The belly, vent, and under tail-coverts are pure white. A stripe of the same colour runs from the corner of the mouth, below the eye, nearly to the ears, and alone disturbs the uniformity of the colouring above. The tail is rounded, uniformly green above, paler beneath, and crossed with a bar of steel blue; the outer feathers are tipped with white.

The plumage of the young is also very similar; but the green of the breast and throat is not so brilliant, and the belly and vent are grey. The white stripe from the opening of the mouth on the cheeks

is conspicuous, and the neck-tufts are marked by a slightly brighter hue.

By Lesson this species is arranged in the second section of his "IV. Race, les Ramphodons," with the species figured on our first and second plates. Both have the edges of the mandibles serrated, but differ very much in form and plumage from the type of the genus.

PLATE 16.

TROCHILUS WAGLERII.

(Wagler's Humming-Bird.)

Lizars sc.

WAGLER'S HUMMING-BIRD.

Trochilus Waglerii.—LESSON.

PLATE XVI.

Le Wagler, Ornismya Waglerii, *Lesson, Histoire Naturelle des Oiseaux-mouches*, p. 203, pl. lxxiii.

THIS beautiful species has been considered by some to be the male of *T. sapphirinus*; but we have followed the authority of Lesson, who has devoted so much time to the study of this family, in supposing it to be distinct. It is about four inches in length. The whole plumage is of a deep and dull emerald green, appearing very dark in those parts subjected to shade, but with very brilliant blue and golden reflections on the parts catching the light. The tail is slightly forked, and, with the wings, is tinged with dull blue, the latter appearing almost of that colour, and varying from the purple shade which is the general tint of the quills in almost all the species. The native country of Wagler's Humming-Bird is Brazil.

In this place it will be proper to introduce one or two species, which are in many respects near allies. The first we shall mention is the

SAPPHIRE AND EMERALD HUMMING-BIRD.

Trochilus bicolor.—GMELIN.

Trochilus bicolor, *Gmelin, edition of Linnæus.*—Sapphire and Emerald Humming-Bird, *Latham, General History*, iv. p. 329.—Le Sapphire emeraude, *Lesson, Histoire Naturelle des Oiseaux-mouches*, p. 161, Pls. xlix and l.

THIS species is distinguished at once from that figured on the last plate, by the rich green of the whole body, except the throat, breast and tail. In the above mentioned bird these parts are tinged with a much greater shade of blue, and seem in some lights to be almost of that colour; the crown is of a very deep tint, and appears much darker than the rest of the body; the throat and breast gradually shading into the belly, are very rich blue, with metallic lustre; the tail is deep steel-blue above and below, and appears scarcely so much forked as in the preceding bird; the bill has the upper mandible black, the lower yellowish white, except at the tip, which is brown. The female resembles the male, except on the under parts; the beautiful blue of the throat and breast is nearly pure white, and, as it reaches the belly and vent, becomes mixed with green. The young birds differ by the blue throat being very dull, by the vent and flanks being of a greenish black, and by the whole plumage wanting in brilliancy.

It is a native of French Guiana, and Latham mentions it from the island of Guadaloupe.

THE OURISSIA.

Trochilus Maugerii.—LESSON.

Trochilus Maugerii, *Vieillot.*—T. Ourissia? *Linnæus.*—Melisuga Surinamensis, *Edwards.*—Oiseau-mouche Mauge, *Lesson, Histoire Naturelle des Oiseaux-mouches,* pls. lxviii. and lxix.

There is considerable difficulty in the unravelling of the synonyms and opinions regarding this species, and it is most probable that the name applied by Vieillot, and latterly by Lesson, must be supplanted by that of Ourissia.

We give the description of the bird, figured under the first title. It is about three inches and a half in length; the bill black, with the base of the under mandible yellow; the upper parts are dull green, but with very brilliant reflections, approaching sometimes to blue, and the same colour occupies the fore part of the breast; on the throat and belly the green is more brilliant; the vent and under tail coverts are greyish; the tail is deeply forked, of a steel blue, and it may be remarked, that this will be the character which will distinguish it from those it has been confounded with.

The female, according to Lesson, is less, and with all the colours duller; the lower parts grey; the tail slightly forked; the centre feathers green, the others brown, tinged with blue, and the two centre ones tipped with white. The specimens which Lesson describes were sent from Porto Rico.

The next species is

THE BLUE-FRONTED HUMMING-BIRD.

Trochilus glaucopis.—GMELIN.

Trochilus glaucopis, *Gmelin, edition of Linnæus.*—The Blue Fronted Humming-Bird, Trochilus frontalis, *Latham, General History*, vol. iv. p. 352.—Oiseau-mouche glaucope, *Lesson, Histoire Naturelle des Oiseaux-mouches*, p. 175, Pls. lviii–lix.

The forehead of this species is of a rich metallic blue, with violet reflections; the upper parts of the body are of a rather dull green, but which, according to Dr Latham, is darker in some specimens, and in others nearly of the same tint with the lower parts. The lower parts are bright emerald green, with the feathers on the throat and breast in the form of scales; the vent and under tail coverts are greyish white; the tail is deeply forked, the feathers composing it broad, but graduated at the tips; the colour is an intense steel blue.

The only discrepancy between the description of Lesson, who has figured both sexes, and that of Dr Latham, is, that the latter describes the legs feathered to the toes, the former has drawn them unplumed.

The female wants the blue upon the crown, which is of the same uniform green with the upper parts; the throat, breast, and belly, are of a dull grey, dashed with green on the flanks, and the tail is greenish above, with a blue tip.

The young of the first year have the head brown, the under parts of a clear grey, covered with a collar of golden green upon the higher part of the breast. This species inhabits Brazil.

AUDEBERT'S HUMMING-BIRD.

Trochilus cæruleus.—AUDEBERT.

Trochilus cœruleus, *Audebert, Oiseaux dorées*, pl. 40.—L'Oiseau-mouche Audebert, *Lesson, Histoire Naturelle des Oiseaux-mouches*, 164. pl. li.

THIS species, to which Lesson has applied the title of Audebertii, though described by that naturalist under another name, is closely allied to *T. bicolor*, and is introduced by Buffon as a variety of it. The upper parts are of a dull green, the lower parts, except the throat and vent, bright emerald green; the throat is a rich sapphirine blue, and the vent and under tail-coverts are white. The form of the tail differs from that of the *T. bicolor*, being completely rounded at the tip; above and below it is of a deep and dull blue. It is a native of Guiana.

There are yet two birds to be introduced here, which, as far as we can judge without an examination of specimens, are much allied to those just described, and of which Plate xvi. will give some idea of the form. They both appear to have been unfigured before the beautiful work of Lesson gave us

a knowledge of them. The first that naturalist has described under the title of

SWAINSON'S HUMMING-BIRD.

Trochilus Swainsonii.—Lesson.

Le Swainson, *Lesson, Histoire Naturelle des Oisseaux-mouches*, pl. 70.

Before describing this bird, we may remark that Lesson has also applied the name of this distinguished British ornithologist to another Humming-Bird, and the only reason that we can see for retaining it to both is, that the other, represented on our thirtieth Plate, will belong to a separate group of this large family, that of which *T. hirsutus* forms the type, and which has been characterised by Swainson under the name of *Pœthornus*, and by Boié under that of *Glaucis*.

It is rather a large species, being above four inches in length; the upper parts are of a uniform golden green tint, while the throat and fore part of the neck are clothed with feathers of the most brilliant emerald green, and which shade into a duller tint upon the flanks; on the middle of the breast there is a patch of velvety black; the vent plumes are whitish. The tail is deeply forked, and of a dull indigo blue.

This species is described by Lesson from a single specimen in the Parisian gallery. It was received from Brazil. The other bird we alluded to may be termed the

CRIMSON-RUMPED HUMMING-BIRD.

Trochilus erythronotus.—LESSON.

L'Erythronote, Ornismya erythronotos, *Lesson*, *Histoire Naturelle des Oiseaux-mouches*, p. 181. pl. lxi.

THIS bird, Lesson observes, may prove to be the young of the last. But although the form is very similar, the colour seems so distinct, that it is unlike what is seen in the others which vary from the young to the adult plumage. In length it is little above three inches. The head, back of the neck, and entire under parts, are of an emerald green, which, though dull, shews changes of tint with the position. On the under side the colour is quite uniform, and without any black patch. The lower part of the back, rump, and the wing-coverts, are of a rich crimson, with golden reflections. The tail is deeply forked, and is of an indigo-blue colour on both surfaces. It is a native of Brazil.

NEUWIED'S HUMMING-BIRD.

Trochilus cyanogenys.—NEUWIED.

L'Oiseau-mouche Wied, Trochilus Wiedii, *Lesson*, *Supplement*, pl. xxvi.

THIS is closely allied to the preceding, but is considerably smaller. The upper plumage is of a brilliant and shining sapphirine-green, with yellowish

reflections. The lower parts are of a clearer or more emerald tinge, and are shaded into pure white at the vent. The throat and auriculars are of a brilliant sapphirine-blue. The tail is rounded at the end, and is of a very deep steel-blue, with green reflections above. It was discovered by Prince Newied, in Brazil.

THE ATALA.

Trochilus Atala.—Lesson.

L'Atala, Ornismya Atala, *Lesson*, *Trochilidées*, pl. xlii.

This species is also very closely allied to several of those preceding. It is two inches and a-half in length, and is above and below of a clear emerald-green, without any blue on the throat. The vent and tail-coverts are pure white. The tail, which is square, is of a steel-blue, deep and bright. It is a native of Brazil.

Lizars sc.

TROCHILUS MESOLEUCUS

(White striped Humming Bird.)

WHITE-STRIPED HUMMING-BIRD.

Trochilus mesoleucus.—TEMMINCK.

PLATE XVII.

Oiseau-mouche mediastin, Trochilus mesoleucus, *Temminck, Planches Coloriées*, 317. Male, Female, and Young.—*Lesson. Histoire Naturelle des Oiseaux-mouches*, and *Trochilidées*, pl. xxix. xxx. and xlv.

THIS curiously marked species was first described by M. Temminck, and figured in the Planches Coloriées. It is of considerable size and strength, and is remarkable for the narrow stripe of white which runs from the throat along the centre of the belly. The length is about four inches and a half, the bill perfectly straight and proportionally long; the plumes on the head are of a rich glaucous blue, and of the form of scales, the auriculars are brown, bordered below with a narrow line of white; the whole throat and neck is covered with scaly feathers of a rich amethystine tint, which lengthen upon each side, and stretch upon the neck in narrow points. From the centre of this patch is a pure white narrow line, which reaches to the tail-coverts of the same colour. The sides, as well as the back, are of a dull golden green, assuming a brighter tint on the upper parts. The

tail is very ample and slightly forked; it has a brownish green lustre, and the two outer feathers are marked with a round white spot at the tips.

The female has nearly the same plumage as the male, except on the throat; the part occupied by the beautiful patch is a greyish-white, and the base of the feathers is marked with a darker tint; from this the middle line of white, equally conspicuous as in the other sex, descends to the tail.

In the young the tints are generally duller, and a few straggling crimson feathers are generally observable on the throats of the males. The species is a native of Brazil.

Another bird, allied in form and colouring to this, and figured by Temminck, is the

SCALY-THROATED HUMMING-BIRD.

Trochilus squamosus.—Temminck.

Oiseau-mouche ecaillé, Trochilus squamosus, *Temminck, Planches Coloriées*, pl. 205.—Oiseau-mouche, *Temminck.* —Ornismya Temminckii, *Lesson, Histoire Naturelle des Oisseaux-mouches*, pl. xx. Male.

To this bird Lesson has given the name of M. Temminck, its first describer, but as usual we have retained the name which that gentleman originally gave. It has exactly the same form with the last we have described, and the markings are all so simi-

lar, that the same species might almost be made by a change of colour on the same engraving. The colour of the body is of a rich green. The throat, where the amethystine patch of the former is placed, is a pure white, but the base of each feather is distinctly marked with a deep shade of grey, which gives a scaly appearance to that part, and from whence Temminck has taken the character for his name; a white line is continued along the centre of the lower parts, and joins the tail-coverts of the same colour. Its native country is also Brazil.

WHITE-THROATED HUMMING-BIRD.

Trochilus albicollis.—VIEILLOT.

Oiseau-mouche à gorge blanche; Trochilus albicollis, *Temminck, Planches Coloriées*, 203.—*Lesson, Histoire Naturelle des Oiseaux-mouches*, pl. lxiii.

ANOTHER species, also corresponding in form with the last. There is, however, a considerable difference in Lesson and Temminck's representation of the same bird, the first making the white patch appear in the middle of the breast, the latter placing it where the scaly feathers are in the preceding. The rest of the plumage is of a bright green, except the centre of the belly, and under tail-coverts, which have the same mesial line with the others. The tail is scarcely so much forked as in the last; the two centre feathers are entirely

brownish-green, the others dull blue, with white tips. It inhabits Brazil.

There is yet a fourth species, which will most naturally be introduced here, though it differs in the form of the tail: it is the

SUPERB HUMMING-BIRD.

Trochilus superbus.—SHAW.

Superb Humming-bird; Trochilus superbus, *Shaw, Naturalist's Miscellany*, vol. xii. pl. 517.—*Zoology*, vol. viii. p. 323.—Oiseau-mouche superbe, *Temminck, Planches Coloriées*, 299.—Oiseau-mouche Corinne, *Lesson, Histoire Naturelle des Oiseaux-mouches*, pl. ii.

THIS splendid species was first noticed and described by Dr Shaw: afterwards it was figured by Temminck; and again it is represented by Lesson, who has applied to it the name of "Corinne," for what reason he does not explain. The description of its discoverer is as follows: "It is unquestionably one of the finest of this brilliant race. Its length is about four inches and a quarter; the bill being long in proportion to the bird, straight and black: the crown of the head bright sky-blue; from the bill to the head, on each side, a moderately broad black stripe, and beneath this a white stripe: throat and upper part of the breast of a most brilliant scarlet, the feathers full, or somewhat projecting; remainder of the body, both above and below, golden-

green, but paler or greyer beneath: wings purplish-brown; tail of the same, but the outsides of the feathers golden-green, appearing of that colour when closed; each of the two outside feathers tipped with white."

The modern plates agree with this description, except that there is no trace of the black line beneath the blue of the head. But Temminck says that the females only are distinguished by this mark. The tail is very strongly wedge-shaped, instead of the form assumed by the three we have just now described. This species is a native of the Antilles —the island of Trinité.

DUKE OF RIVOLI'S HUMMING-BIRD.

Trochilus Rivolii.—LESSON.

PLATE XVIII.

L'Oiseau-mouche Rivoli; Ornismya Rivolii, *Lesson, Histoire Naturelle des Oiseaux-mouches*, pl. iv.

THIS very splendid Humming-Bird may be placed next to the last we have described, by the straight form of the bill; but the form of the tail is again different, in being very ample, and square at the end. M. Lesson considers it undescribed, and has dedicated it to the Duke of Rivoli, in whose collection the specimen which served for his copy was procured.

It is in length about four inches, of which the bill is an inch. The head is crowned with a beautiful cowl of rich violet-blue: the upper parts, breast, belly, and vent, are of a deep golden-green, assuming a very dark shade in some positions; this occupies the space wherein the eye is situated, in the form of a narrow line to the rictus, and separates the rich blue of the cowl from a splendid emerald-green gorget, which occupies the throat and all the fore part of the neck, resting upon the side in a

TROCHILUS RIVOLII.

(Duke of Rivoli's Humming Bird.)

rounded point. The lower tail-coverts are nearly white. The tail is nearly of the same colour with the upper parts, the outer feathers with a greater proportion of brownish gold colour.

This species is a native of Mexico.

BUFFON'S HUMMING-BIRD.

Trochilus Buffonii.—LESSON.

PLATE XIX.

Le Colibri Buffon, Trochilus Buffonii, *Lesson, Trochilidées*, pl. v.

THIS is a large species, being more than five inches in length. The head is of a golden-green: the neck, back, and shoulders of the same colour, which changes to a reddish tint on the upper tail-coverts. The neck, throat, and upper part of the breast are covered with scaly formed feathers of an emerald-green, very brilliant: the rest of the under parts are of the same colour, but of a more subdued tint and having a bluish shade in some lights, while the uniform colour is relieved by each feather being edged with pale grey. The vent and flanks have a shade of brown intermixed, and the lower tail-coverts are pure white. The tail is slightly forked, and is of a uniform steel-blue.

The species from which M. Lesson took his figure, and the only one we are aware of, was supposed to come from Brazil. That naturalist places this bird at the head of his " VIII. Race, Les Colibris

PLATE 19.

TROCHILUS BUFFONII.

(Buffon's Humming Bird.)

Lizars sc

de Buffon," and includes with them the *T. hirsutus* and its allies. The form seems, however, very different; and we have retained the birds which are most allied, with the descriptions on our last two plates, on which the types are represented.

MANGO HUMMING-BIRD.

Trochilus mango.—LINNÆUS.

PLATE XX.

Trochilus mango, *Linnæus.*—Mango Humming-Bird, *Latham, General History*, iv. p. 310.—*Shaw's Zoology*, viii. 294.—Plastron noir Buffon; Le Colibri à plastron noir, *Lesson, Histoire Naturelle des Colibris*, pl. xiii. bis, xiv. xv.

THIS very common species has been the subject of many descriptions, under different names, from the difference in the appearance of the adult and young. The list of synonyms might be made very long; but those we have given are sufficient to distinguish the adults.

The length is about four inches and a quarter: the upper parts, flanks, and under tail-coverts, are bright golden-green, having on the forehead and crown brilliant and distinct reflections with the light. From the chin to the vent there is a stripe of deep velvet-black, which is shaded into the sides with a brilliant steel-blue: the flank above the insertion of the thighs is barred with a narrow band of white. The tail, of which the feathers are very broad, is rounded at the tip: the centre feathers above are of a bright

PLATE 20.

TROCHILUS MANGO.

(Mango Humming-Bird.)

Lizars sc.

golden-green, with violet reflections; the others, and all beneath, violet or purple, according to the light, and tipped and edged with a shade much deeper.

The young, I believe, will stand as the *T. margaritaceus*, *gularis*, and *maculatus*. In this state, the upper plumage is paler, with a more golden or browner lustre, the under parts pure white, shaded with green on the flanks, and having an irregular blackish-brown line from the chin below the centre of the belly. The tail is of rich and pale violet on both sides, except the upper surface of the centre feathers, which are of the same colour with the back; and in the very young states, the outer feathers are tipped with white.

This seems a very common species in all the West India Islands, and is also a hardy bird. We have alluded to its being brought alive to this country, at p. 61. of the first volume. On Plates XXXII. and XXXIII. of the same volume we also represented a species allied to this, and which, with a few others which we shall immediately mention, form a very natural group, both in form and in disposition of colours. From this Lesson makes his "VI. Race, Les Caraibes," and Boié his genus *Anthracothorax*. *Trochilus mango* and *T. gramineus* will be typical of it. The next we may mention is the

GREEN HUMMING-BIRD.

Trochilus viridis.—AUDEBERT & VIEILLOT.

Trochilus viridis, *Audebert, Oiseaux dorées.*—Colibri cyanure, *Lesson, Histoire Naturelle des Colibris*, pl. xi.

THIS species, more sombre-looking than usual, is about four inches and a half in length. The whole plumage of the body is of an emerald-green, without much reflection, except upon the upper tail-coverts, and the tint is nearly of one shade on every part: the tail, which is of the same form with the two preceding, is entirely of a steel-blue, having the outer edge of the last feathers relieved with a narrow fringe of white. The only specimen with which M. Lesson is acquainted came from Porto Rico.

GREEN BLACK-BELLIED HUMMING-BIRD.

Trochilus holosericeus.—LINNÆUS.

Trochilus holosericeus, *Linnæus.*—Green Black-bellied Humming-Bird. *Edward's Birds*, pl. 36.—*Latham's General History*, iv. p. 318.—Colibri vert et noir, *Buffon.*—Le Caraibe, *Lesson, Histoire Naturelle des Oiseaux-mouches*, pl. xx.

THIS species is in length about four inches and a half. The upper parts are of a bright golden-green: on the throat there is a patch of scaly feathers of an emerald-green, and immediately below a band of rich metallic blue, varying in size. The rest of the lower parts, except the tail-coverts, are of a deep blue, or brownish-black: the tail-coverts are white. The tail is entirely of a deep steel-blue, in some lights appearing nearly dull black.

The female, says Lesson, "according to Brisson, resembles the male." It is probable, however, that this sex has not yet been distinguished. Dr Latham gives Mexico and Guiana for the habitation of this bird; while Lesson thinks that it is confined to the Antilles alone. It may be worth attention, as two species may be included in those from the different countries.

The next bird begins to assume more of the plumage of *T. hirsutus:* it is the

WHITE-TAILED HUMMING-BIRD.

Trochilus leucurus.—LINNÆUS.

Trochilus leucurus, *Linnæus.*—Colibri à collier rouge, *Buffon.*—White-tailed Humming-Bird, *Latham, General History*, iv. 308.—*Edwards*, pl. cclvi.—Le colibri ruficol, pl. xxii.

THIS species is nearly similar to the preceding birds in size, but it is of a narrower or more slender make. The upper parts are of a golden-green; a stripe of reddish-brown passes from the eye above the auriculars, and another line of white from the rictus below them. The chin is blackish-grey, and immediately succeeding is a patch or collar of chestnut-red, without reflections; from thence the green of the upper parts spreads itself upon the breast, in the form of a broad band. The belly and vent are of a reddish-grey; the under tail-coverts green, bordered with a fringe of white. The centre tail-feathers are golden green, those on the outside greyish-white, each diagonally tipped with black. The plumage of the female and young do not seem to be known. It inhabits Dutch Guiana, and has been brought from Surinam. The next very splendid species which we have to introduce, though agreeing in

the general distribution of colour, has the tail considerably forked; it is the

AURULENT HUMMING-BIRD.

Trochilus aurulentus.—LATHAM.

Aurulent Humming-Bird, Trochilus aurulentus, *Latham, General History*, iv. p. 307.—Le Hausse col doré, *Lesson, Histoire Naturelle des Colibris*, pls. xvi. xvii. xviii. xix.

LESSON has devoted no less than four plates to this splendid species, which we have said differs from the others placed in this group, by the forked tail. This form of the tail, however, is peculiar to the males, that of the young and females being in accordance with the characters of the others. It is a curious fact, that, in a great many species, the tail, which assumes such a variety of form, deviates in the males only in those species which, though in other respects they would be named "aberrant," could not be with propriety separated.

The upper parts of this bird are of a golden-green, which extends to the flanks and lower tail-coverts. The gorget or throat-patch is of a brilliant golden-yellow, reflected with green. It occupies the whole fore part of the neck, and upper part of the breast. The breast and belly, in a line with the insertion of the thighs, is deep bluish-black, following which, and between the tail-coverts, there is a band of white. The tail has the centre feathers green on the upper

surface; the others rich pinkish-violet, with the tips and edges nearly black. The length is about four inches and a-half.

The female, which, though less brilliant, is no less chastely beautiful, is above of a golden-green; the whole under parts of a pleasing grey. The tail, which assumes the usual form, has the two centre feathers green, the others rich chestnut at the base, each feather having next a diagonal broad band of deep steel-blue, and at the extremity tipped with pure white; an assemblage of colour very marked, and contrasting with the otherwise unobtrusive plumage.

The young male has the gorget and lower parts greyish-white, with the black appearing in the centre of the belly. The tail is of the usual form, but has the base, except of the centre feathers, chestnut-brown, with a band of black shading into it, and is tipped with white. The young females are like the adults, except in having the tail of a uniform steel-blue, with white tips. The description of the three last are given upon the authority of Lesson. Porto Rico and the Antilles seem to be the most general stations whence this species is received.

We have one other bird to mention in this place, which, though certainly distinct from any of those now described, is yet known only in its young state. Lesson has figured it under the name of *T. Prevostii, young*, referring, in his Synonyms, to the *T. hypophæus* of Latham. It has the same assemblage of colours, and form of body, wings, and tail, but the

bill is straight, and comparatively short. We give the description with the intention of calling attention to the species.

BROWN-CROWNED HUMMING-BIRD.

Trochilus hypophæus.—LATHAM.

The Brown-crowned Humming-Bird, *Latham, General History*, iv. p. 331.—Colibri de Prévost jeune, Trochilus Prevostii, *Lesson, Histoire Naturelle des Colibris*, pl. xxiv.

THE length is from three to four inches. The head and space around the eyes is clear yellowish-brown. The upper parts are brownish-green; the lower grey, shading into white, where they join the green of the upper. The centre of the throat is marked with a longitudinal patch of deep-black. The under tail-coverts are green, tipped with white. The tail is rounded, and, except the centre feathers, is of a deep blackish-brown, and at the tips white. Lesson did not know whence the species he copied was brought. Those described by Dr Latham were received from Tobago.

BLACK-CAPPED HUMMING-BIRD.

Trochilus polytmus.—Linnæus.

Plate XXI.

Long-tailed Black-capped Humming-Bird, *Edwards*, pl. xxxiv.—Black-capped Humming-Bird, *Latham*, *General History*, iv. p. 296.—L'Oiseau-mouche à tête noire, Ornismya cephalatra, *Lesson*, *Histoire Naturelle des Oiseaux-mouches*, pl. xvii.

In the four birds figured upon the next Plates, we see a very remarkable development of tail, in three instances confined chiefly to the lateral feathers, in the other, to those of the centre. The three first remind us strongly of the forms assumed in the Drongo Shrikes, and many of the Muscicapidæ.

The Black-capped Humming-bird is in length nine inches, of which the long feathers in the tail are alone six. The bill is of a fine straw-yellow black at the tip; the feet and legs are of the same colour. The feathers forming the black part of the head are of a loose and silky texture, considerably lengthened, and make a deep black crest. The upper parts, breast and belly, are of a rich golden-green, and the gorget of scaly feathers covering the whole of the throat and foreparts of the neck, is of the most brilliant emerald-green. The colour of the wings are a dark

TROCHILUS POLYTMUS.

(Black-capped Humming-Bird.)

brownish-black. The tail is forked, and the eight centre feathers gradually decrease in length; the exterior shoots far beyond them into two narrow plumes, pliable from their weight. It is of a brownish-black colour, with green reflections.

The female, says Dr Latham, "is of the same size, with the bill the same, the base of the under mandible white half way; crown dusky brown; upper parts of the plumage as in the male; beneath, from chin to vent, white; on the sides of the neck the green and white are intermixed irregularly; tail green, without the long feathers, and the tips of all, except the two middle, white for almost half the length."

It is a native principally of the island of Jamaica; but Dr Latham also mentions having specimens from Guiana.

ROUGH-LEGGED RACKET-TAILED HUMMING-BIRD.

Trochilus Underwoodii.—Lesson.

Plate XXII.

La Raquette empennée, Trochilus Underwoodii, *Lesson, Trochilidées*, pl. xxxii.

In the birtl now represented, and another species, we see the fork of the tail assuming another variation, in the diminution and again widening of the web, so as to leave a part of the shaft bare of plumes. The present species is, besides, very remarkable for the feathering of its tarsi and base of the toes, which are thickly covered with narrow horny-like plumes, and I believe is the only instance of that structure among this tribe. All the upper parts are of a golden green, the rump barred with a band of white. A gorget of bright emerald-green, occupies the throat, forepart of the neck, and almost the whole breast, which is immediately succeeded by a deep tint of brownish green. The thighs and plumed tarsi are pure white. The tail, deeply forked, is a blackish-brown, the centre feathers tinged with green. The form will be best understood by referring to the accompanying plate. The country of this species is unknown.

TROCHILUS UNDERWOODII.

(Rough-legged Racket-tailed Humming-Bird.)

The only other species whose tail takes a similar form is the

RACKET-TAILED HUMMING-BIRD.

Trochilus platurus.—LATHAM.

Racket-Tailed Humming-Bird, *Latham, General History*, iv., p. 338.—Oiseau-mouche à raquettes, *Lesson, Histoire Naturelle des Oiseaux-mouche*, p. xl.

THIS bird at first-sight has nearly the resemblance of the last, but is at once distinguished from it by the unplumed tarsi. It is of a duller green above, and is of a uniform tint. The gorget is of the same bright emerald-green, and occupies nearly a similar place, covering the whole of the fore part of the throat and neck. The belly is of a dull brown, tinged with green, and the vent and under-tail coverts are nearly pure white. The tail above, greenish brown, beneath of reddish or yellowish white. The feathers, excepting the two outer ones, are pointed, and assume a slightly forked form. The two on the outside exceed the others by about half their own length, and the shafts commence to be entirely bare where they exceed the length of the others, and are finished by a nearly round tip of black plume in the form of a racket-board.

The plumage of the female is not very well known. Guiana is the only country whence they have been received.

BAR-TAILED HUMMING-BIRD.

Trochilus sparganurus.—Shaw.

Plate XXIII.

The Bar-Tailed Humming-Bird, Trochilus sparganurus, *Shaw, General Zoology*, viii. p. 291.—Fan-Tailed Humming-Bird, *Latham*, iv. p. 290.—L'Oiseau-mouche sapho, Ornismya sapho, *Lesson, Histoire Naturelle des Oiseaux-mouches*, pls. xxvii. and xxviii.

This splendid species seems to have been first noticed by Dr Shaw, in his General Zoology, and figured from a specimen in Bullock's Museum. It is most remarkable for the splendid colouring and development of its tail, which Lesson compares to that of the New Holland Menura. It is composed of ten broad feathers, gradually exceeding each other by about half an inch, three quarters, &c., and the last by above one inch and a half longer than the others. The colour may be said to be a brilliant reddish orange, with a brazen or metallic lustre of the greatest clearness, according to the various lights in which it is placed assuming a greater tinge of red or yellow. The tip of each feather has a broad black bar, and the lower part of the web of the outer feather is of the same colour. When the tail is closed, the ap-

TROCHILUS SPARGANURUS.

(Bar-tailed Humming-Bird.)

pearance is as if regularly barred with black. The upper parts of the plumage are of a golden green, except the rump, which is of a fine madder tint, but without any metallic lustre. The feathers upon this part are more tufted, and thicker than usual. The whole of the under surface, as far as the upper part of the belly, is of a bright emerald green, brightest on the fore part of the throat. The lower belly is dull brownish green, the vent whitish.

Lesson has represented another state of this bird, which he thinks is that of the female. All the upper parts are of a uniform green. The throat and breast, instead of the emerald-coloured scaly gorget, are of a dull yellowish grey, which colour occupies also the rest of the under parts. The tail is about only half the length, the feathers of the same broad form; the outer one of a yellowish, the others of a reddish coppery lustre, with a slight indication of a darker shade at the tips, but without any distinct bar.

There seems a little uncertainty regarding the native country of this bird. Shaw's specimens were said to come from Peru; and Lesson mentions the interior of Brazil for those from which he took his drawings and descriptions. The figure of this bird is reduced one-half.

In this place we must mention another very beautiful species, figured and described by M. Lesson, possessing the same form, and in proportion, a development of tail nearly equal to it; it is the

NUNA HUMMING-BIRD.

Trochilus Nuna.—LESSON.

La Nouna-Koali, Ornismya Nuna, *Lesson, Histoire Naturelle des Oiseaux-mouches, Supplement*, pl. xxxv.

It is about five inches in length, of which the tail makes up three. The upper parts of the plumage are of a brilliant emerald-green, with golden reflections. The under parts are pure white; but each feather has at its tip a circular spot or eye, of a deep emerald-green, which forms a fine contrast. On the throat and breast, these are well and distinctly marked, but towards the vent they become less defined. The under coverts of the tail are bright chestnut. The tail itself has the feathers very broad, and they gradually increase in length like those of the bar-tailed species. The base of all the middle ones are brownish purple. The lower part of the exposed portion on the upper side is of a deep steel-blue, changing to a bright and beautiful green towards the tip. The outer feathers have the exposed parts of the tips deep steel-blue; but the lower half of the outer web is pure white. In another specimen, which M. Lesson supposes to be the young, the crown of the head is almost grey, and the long outer feathers of the tail want the white outer edge, and are entirely brown, and the under plumage was dashed with brownish red.

These specimens come from Peru.

Lizars sc.

TROCHILUS PELLA.

(Topaz-throated Humming-Bird.)

TOPAZ-THROATED HUMMING-BIRD.

Trochilus pella.—Linnæus.

Plate XXIV.—Male.

Trochilus pella, *Linnæus.*—The Topaz-Throated Humming-Bird, *Shaw's General Zoology*, viii. p. 274.—*Latham's General History.* iv. p. 291.—Le Colibri topaz, *Lesson, Histoire Naturelle des Colibris*, Pls. ii, iii, iv, v.

This species is without any exception one of the most splendid of the whole race; the plumage in every part is composed of the scaly formed feathers, which are always present when a metallic lustre prevails; and in every position, its brilliant colours receive a variation of tint differing from that last seen, and superior in splendour to any thing with which we could compare it. It is a large species also, and in many ways is a most interesting bird. The African form is naturally called to our remembrance by the general appearance of it to the Cyniridæ, in which the shape of the gorget and tail leads still nearer. In its habits it is also curious, being said to frequent the banks of rivers, skimming along their surface after insects, and often perching on dried twigs along their margins: in this there is an approximation to several groups.

The length of this bird, not including the long centre tail feathers, is five inches and a half, these exceed the others by nearly three inches; the colours of the whole plumage of the body may be said to be a rich brownish orange, in some lights appearing of the deepest lake, and in others of a brilliant ruby colour, tinted with golden; on the lower surface the golden lustre is most prevalent, above, the deep shade and ruby tint; the gorget is alternately of a topaz-yellow or emerald green, and it is surrounded by a shade of nearly velvet black, which gradually assumes a purple tint, and shades into the colour of the body; the wings are very long and powerful; the tail is above of a golden green shaded with red, below of a bright chestnut; in form it is rather rounded, and the two centre feathers make it appear sometimes very lengthened, sometimes forked, according to their position; the tarsi are feathered to the division of the toes.

The young differ in wanting the long feathers in the tail, the two centre plumes of which exceed the others by about one-eighth of an inch; the plumage of the upper parts is of a bright green, with the ruby tints appearing at intervals; the under part has more of the red colour, and is shaded with green and bright orange; the gorget has not appeared, though the space for it is clearly seen.

The female is somewhat less than the young males; the centre tail feathers are slightly longer; the prevailing colour of the plumage is brilliant emerald green,

with metallic lustre, but which is somewhat diminished by a grey tint which pervades the whole; the gorget is marked by brown feathers, which have a golden lustre when placed in the light, but is not very distinctly defined; the vent is grey: the outer tail feathers are of a dull green, the next pair are of a brilliant violet, the others of a bright chestnut.

These beautiful birds are found in Cayenne and Guiana.

The figure of this bird is reduced one-half.

TOPAZ THROATED HUMMING-BIRD.

Trochilus pella.—Linnæus. Variety.

Plate XXV.

We have given a copy from Lesson of a curious variety of this bird, exhibiting an imperfect state of albino, and in which the pure white feathers contrast beautifully with the gorgeous plumage of the other parts, which did not seem to want any thing of their brilliancy. It has been thought by some that the occurrence of white feathers, or of pale coloured varieties, did not take place in those birds having plumage of shining or metallic lustre. Of this the accompanying plate will be a proof to the contrary, where it is exhibited in one possessing those qualities to the utmost; and we have specimens of one or two other species where it also occurs. As familiar instances of it, we may mention the common Starling, Pheasant, and Peacock.

TROCHILUS PELLA varied with White.

(Topaz-throated Humming-Bird.)

TROCHILUS SUPERCILIOSUS Male.

(The Supercilious Humming Bird.)

Edwin sc.

TROCHILUS SUPERCILIOSUS Female.

(The Supercilious Humming-Bird.)

THE SUPERCILIOUS HUMMING-BIRD.

Trochilus superciliosus.—LINNÆUS.

PLATES XXVI and XXVII.

Supercilious Humming-Bird, *Shaw, General Zoology*, viii. p. 284.—*Latham's General History*, iv. p. 293.—Le Brin blanc, *Buffon.*—Le Colibri à brin blanc, *Lesson. Histoire Naturelle des Colibris*, Pl. vi. Male; Pl. vii. Female.

LESSON makes of these birds his "VIII. Race, les Brins blancs," and separates them from the form of *T. hirsutus*, which immediately precedes them. By Mr Swainson they are united under his group Phæthornus, constituting his third division among the *Trochilidæ*. As a group we do not see how they can be separated, and even if an after division should be attempted, according to Lesson's characters the female of the one would enter into a different section. Boié, again, seems to have made his genus Glaucis from them, and it is under either that or Mr Swainson's title that they should now stand; that gentleman is of opinion that it is by these that the Humming-Birds will unite with the Promeropidæ. We shall proceed to describe what seems to be known as distinct species among them.

The bill of the Supercilious Humming-Bird is long

and bent, considerably dilated at the base, and, as in all the genus, has the under mandible entering when closed within the upper one; the base of a bright orange. The upper plumage of the bird is of a brown bronzed green; two reddish white lines mark the cheeks; the one more in the shape of a spot above the eye, the other in a line from the corner of the mouth, below the auriculars; all the lower parts are of a brownish white. The tail without the long feathers is wedge-shaped, each feather widening towards the tip, and then ending in a triangular sharp point; the long feathers keep the breadth of the others for the same length, when they suddenly become narrow, and form the distinguishing marks of the male. The colour of the tail is bronzed green, shaded nearly to a rich black at the ends, which terminate in a narrow border of white; the projecting ends of the long feathers are also white.

The female is more brilliant in colour than the male, the upper parts of the same tint are very brilliant; the white line from the rictus is well marked, but that above the eye does not appear; the lower parts are of a deeper shade of brown; the tail is very amply rounded; the centre feathers longest, but not projecting, of a bright green, with white tips; the others bright chestnut-red, shading to black, and furnished with a tip of white.

This species is found both in Guiana and Brazil.

PLATE 28.

TROCHILUS EURYNOME.

(Scaly backed Humming-Bird)

Lizars sc.

SCALY BACKED HUMMING-BIRD.

Trochilus Eurynomus.—Lesson.

Plate XXVIII.

Le Colibri Eurynome, Trochilus Eurynomus, *Lesson, Trochilidées*, Pl. xxxi.

This species, undescribed before the work of M. Lesson, is about six inches and a half in length, including the long centre tail-feathers; the head and back of the neck is covered with brown scaly feathers, fringed with chestnut; the remaining upper parts are of a fresh green, the plumes having the form of scales, large and rounded, and fringed with a dull reddish tinge; the upper part of the auriculars is black, while an ochreous yellow line runs above, and one of the same colour from the extremity of the gape; the throat has the feathers also in the form of scales brown in the centre, and fringed with ochreous yellow; the neck, breast, belly, and flanks, are brownish grey, dashed with reddish; the lower tail-coverts are of a reddish chestnut; the tail is wedge-shaped, the centre feathers much prolonged and narrow, green for the length of the others, the projecting tips white; the other feathers are of a deep black at the base,

the tips, for very nearly the half, white. It is a native of Brazil.

The three preceding Plates will give an idea of the form of the birds composing this group, and of the resemblance of the females to those which M. Lesson separates. We shall give the description of the others which are known, some of which are very diminutive. The first we shall mention is

GUY'S HUMMING-BIRD.

Trochilus Guy.—LESSON.

Le Guy Trochilus Guy, *Lesson, Trochilidées*, Pl. xliv.

THIS species approaches nearer than the others to the Supercilious Humming-Bird, and seems even to have been confounded with it. It is considerably less, however, and the projecting feathers of the tail over-stretch it for a much less distance; it is of the same form with that of its near ally, above golden green at the base, then black, the lateral feathers fringed with white at their tips; the projecting narrow parts of the centre plumes also white. The bill is of considerable length, the under mandible bright orange-red, brownish at the tip; the upper parts of the body are brilliant metallic green, the feathers on the crown bordered with reddish; the auriculars are black, surrounded, above by a streak of tawny yellow, and underneath by a line of the same colour; the

chin is of a bright chestnut, in the form of a small gorget; the remaining under parts are of a rich bluish grey, changing to a yellowish red in the centre of the belly and on the vent; the lower tail coverts are pure white. Lesson, the only one who describes this bird, does not mention its native country.

INTERMEDIATE HUMMING-BIRD.

Trochilus intermedius.—LESSON.

Le Colibri intermediaire, Trochilus intermedius, *Lesson, Trochilidées*, Pl. xix.

THIS species is a native of Brazil. It is about three and a half inches in length. In Lesson's representation, the under mandible of the bill is coloured pale pink at the base, then black, then pink and tipped with black; in the description it is mentioned of a yellow colour entirely, "l'inferieure jaunâtre." The former is a curious distribution. The general colour of the plumage is a reddish brown; on the rump, belly, and vent, assuming a sienna colour; above the eye is the pale yellow eye-stripe, beneath the auriculars, which are black, another; the centre feathers of the tail exceed the others only by about half an inch, and become gradually narrower from the base; the projecting part is pure white, the colour of the other parts black, the outer one bordered with reddish-brown.

BOURCIER'S HUMMING-BIRD.

Trochilus Bourcierii.—LESSON.

THIS bird in general appearance also resembles the first we described, but is considerably less. The tail is very ample, and the centre feathers of considerable proportional length. The colour of the upper side is a greenish black, deeper towards the tip, where the outer web is marked with a chestnut spot; the long feathers are brown where they exceed the length of the tail, the tips white; underneath, the whole has a brownish tint. The crown is of a reddish green, which is the prevailing tint over the upper parts, from each feather being fringed with reddish brown, somewhat in the manner of the Scaly-backed Species. The throat is white, the whole of the other under parts of a reddish grey, most vivid upon the sides of the neck; a slight tracing of the superciliary streak and that from the rictus is seen, but it is only visible when the position of the bird is varied. It is a native of Brazil, and Lesson thinks that it inhabits the mountainous districts of that vast country.

BROWN BRAZILIAN HUMMING-BIRD.

Trochilus squalidus.—NATTERER.

Colibri terne, Trochilus squalidus, *Temminck, Planches Coloriés*, pl. 120.—Le Colibri à vestiture terne, *Lesson, Histoire Naturelles des Colibris*, pl. viii.

THIS species was discovered in Brazil by M. Natterer, and first figured by Temminck in the Planches Coloriées; in colouring and the distribution of it, it has every appearance of the supercilious Humming-Bird. Lesson goes so far as to say, that it is a degenerated local variety, with which we cannot agree. The size is scarcely one-half. The upper plumage is a dull brownish green.

The superciliary stripe is very conspicuous, of a reddish yellow, the auriculars beneath are deep brown, and another stripe from the rictus joins the uppermost, surrounding the eye and ear-feathers completely. The throat and breast are dull grey; the feathers of the former are in the shape of scales, with dark centres. The belly and vent are of a tawny yellow. The tail is brown, each feather tipped with white, and the whole extending part of the centre ones of the same colour.

LONGUEMARE'S HUMMING-BIRD.

Trochilus Longuemareus.—LESSON.

Le Colibri Longuemare, *Lesson*, *Trochilidées*, pls. ii. & lxii.

THIS species, says Lesson, has always been confounded with the next, but from which every character distinguishes it. We give this naturalist's description, having no specimen of the bird.

It is about three inches eight lines in length; on the crown there is as it were a cowl of deep brown, tinged with red; the back and sides of the neck are of a brownish red, which is the prevailing colour of the whole upper parts, having upon the back metallic reflections of a green lustre; all the under parts are of a reddish yellow, deepest on the throat and breast; the lower tail-coverts are white. There is not so much variation in the length of the centre feathers of this species as in many, and it has more the appearance of a graduated or wedge-shaped tail. The exceeding tips of the centre feathers are, however, white, the other parts of them and the rest of the tail brown. This species is a native of Cayenne.

RED-BELLIED HUMMING-BIRD.

Trochilus Rufigaster.—Lesson.

Colibri à ventre rousâtre, *Temminck, Planches Coloriées,* pl 120.—Le Colibri à ventre rouse, *Lesson, Histoire Naturelle des Colibris,* pl. ix.

This curious little Humming-Bird is little more than three inches in length, of which the bill alone is one. The crown is of a greyish tint. The superciliary streak is pure white, and passes above to the end of the auriculars. The back of the neck and back, are of a chestnut-red, with golden-green reflections. The under parts are also of a chestnut-red, palest on the throat, and almost changing to yellowish-white on the chin. The tail is brown, tipped with a reddish white. The two centre feathers have golden-green reflections, and the surpassing tips are white. It is a native of Brazil.

DAVID'S HUMMING-BIRD.

Trochilus Davidianus.—Lesson.

Le Colibri David, *Lesson, Trochilidées,* pl. xiii.

This species M. Lesson has dedicated to the celebrated French artist, David. It is of the same size with the last, and of a light graceful form. The general tint of the plumage is brown, deeply colour-

ed above, and beneath of a paler shade, tinted with yellow. The auriculars are of the same deep colour with the upper parts, and form a patch on the cheek, surrounded on the under part with a brighter shade. The tail is regularly graduated, the centre feathers, though longer, not far surpassing the others. It inhabits Cayenne.

These are all the birds which Lesson includes in this form. The others do not possess any particular elongation of the centre tail feathers. The first we shall mention is the

TROCHILUS HIRSUTUS.

(Hairy-legged Humming-Bird)

HAIRY-LEGGED HUMMING-BIRD.

Trochilus hirsutus.—Linnæus.

Plate XXIX.

Trochilus hirsutus, *Linnæus.*—T. Brasiliensis, *Latham* and *Temminck*, auct. *Lesson.*—Le Colibri hirsute, *Lesson, Histoire Naturelle des Colibris*, pl. xxi.

This species will stand as the type of what Lesson makes his second form, among those with curved bills. It was named by Linnæus as above, from the legs being slightly plumed below the first joints; this, however, seems a character not quite constant, and does not appear in the specimens which we have under that name. The distinctions between the males and females of these birds seem to differ very little, as far as we at present know, and there is no prolongation of the centre feathers in the male sex, as we always found in the preceding group. In this species the nest is built of a much looser structure, and of a longer, almost pendulous form.

This bird is about four inches in length. The upper part of the body is of a shining green, with purple reflections, deeply tinged with reddish-brown. All the under parts are of a bright reddish-brown, duller on the flanks. The tail is of a deep shade of

the same colour, the centre feathers shaded with green; a band nearly black crosses at the tips, which, with the exception of those in the centre, are white.

Lesson says it is a native of Brazil, and is rare. We have received numerous specimens of what we conceive to be this species, from the Island of Tobago, where it appears to be very abundant.

Another species having considerable resemblance, is the

MAZEPPA HUMMING-BIRD.

Trochilus Mazeppa.—LESSON.

Le Colibri Mazeppa, Trochilus Mazeppa, *Lesson, Trochilidées*, pl. iii.

THIS bird is about five inches in length. The upper parts are of a much finer greyish-green than its congeners; on the head having the feathers rather of a scaly form, with brilliant reflections. The lower parts are of a clear reddish-brown, tinged with green on the flanks. The tail is very ample, and, except the centre feathers, which are green, is of a brilliant chestnut-red, barred with black at the tip. It is a native of Guiana. Lesson asks, "May this not be the female of a species of which the other sex has not been discovered," and seems to have an idea somewhat similar regarding that of the Hairy-legged Humming-Bird. We have received the latter often

marked "male" and "female," without any difference except in the brilliancy of colouring.

Lesson has introduced another bird into this group, which, to judge from his representation, will rank elsewhere. The tail is slightly forked, and of a dark tint. He names it *Colibri simple, Trochilus simplex.* It is a native of Brazil.

The last of the group is

SWAINSON'S HUMMING-BIRD.

Trochilus Swainsonii.—LESSON.

PLATE XXX.

Le Colibri Swainson, Trochilus Swainsonii, *Le Swainson, Trochilidées*, pl. lxvi.

IN a former Plate we gave a bird from Lesson under the above title, and our only reason for again introducing another Humming-Bird with the same name is, that this group of birds will stand under *Pæthornis Sw.*, and that this species will be placed in our Systems as *P. Swainsonii*; the other as *Cynanthus Swainsonii.*

It is a native of Brazil, and is about three inches in length. The tail does not shew the roundness or graduation which is so conspicuous in the others; like them, however, the centre feathers are green; the others of an ochreous-yellow, barred with black, and with a white tip. The upper parts are of a brilliant brownish-green; the under parts of a reddish chestnut, of a tint nearly uniform.

TROCHILUS SWAINSONII

(Swainson's Humming Bird.)

SYNOPSIS.

SYNOPSIS *

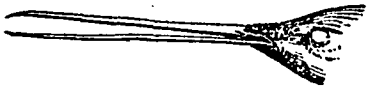
SYNOPSIS OF THE TROCHILIDÆ.

Character of the Family. Bill longer than the head, straight or curved; the upper mandible slightly dilated at the base, the lower entering or sheathed within the upper, the points very sharp. Nostrils basal, lateral, the opening narrow, sometimes covered with the plumes of the forehead. Tongue extensible, long, tubular, divided at the tip, the os hyoides passing over the occiput (like that of the Woodpeckers). Wings long, rigid, the quills rounded at the tips, the first longest, the others gradually decreasing in length. Tail composed of ten feathers, length and form very varied. Tarsi small and slender, scutellated; toes three, nearly equal in length, the two internal connected at the base; hallux comparatively strongest, the nails compressed, much hooked, very sharp. Plumage with metallic lustre. Males usually adorned with a gorget of scaly-formed feathers, crest, ruffs, or ear-tufts. Native country Tropical America †. Contains five Sub-Families.

* The Synopsis is made out chiefly from the works of Vieillot and Audebert, and the Monograph of Lesson, compared, as far as possible, with specimens in the Royal Edinburgh Museum, and in the collection of the conductor. Mr Swainson's five sub-families are given, with that ornithologist's characters, but some species are placed without examination: these, however, are generally marked with doubt. The five subdivisions have been placed as sub-families, and Mr Swainson's title, without the proper termination, has been retained. Genera which have been proposed by different ornithologists are marked under the typical species of each.

† The Northern and Nootka Humming-Birds are found in the northern continent of America; and it is said that Mr Audubon has discovered a third species occasionally inhabiting these northern latitudes.

I. Sub-Fam. TROCHILUS. Bill very straight. Tail moderate, equal or rounded.



1. T. superbus, Superb Humming-Bird.—*Shaw, Gen. Zool. Temm. Pl. Color.* 299. Oiseau-mouche Corinne, *Less. O. M.* ii. Crown of a rich blue; throat amethystine-red, surrounded with a line of pure white, gradually shading into pale grey which covers the under parts; upper parts golden-green; tail rounded, two outer feathers tipped with white. Inhabits the island of Trinité.

Pl. IX. Vol. I.—2. T. quadricolor, Azure-crowned Humming-Bird.—*Vieill.* Oiseau-mouche tête d'azur, *Less. O. M. Supp.* xvii. xviii. Crown brilliant azure-blue, upper parts golden-green, beneath pure white, yellowish upon the flanks; tail brownish-green. Inhabits Brazil.

Pl. XVII. Vol. II.—3. T. mesoleucus, White-striped Humming-Bird.—*Temm. Pl. Color.* 317. *Less. O. M.* xxix. xxx. Plumage dull-green; gorget of rich amethystine-red stretching upon the sides of the neck; a central white line along the centre of the under parts. Female wants the gorget; that part is occupied by a patch of greyish-white, the base of each feather darker. Inhabits Brazil.

4. T. squamosus, Scaly-throated Humming-Bird.—*Temm. Pl. Color.* 205. Oiseau-mouche écaillé, *Less. O. M.* xx. Plumage bright-green; throat white, with the centre of each feather grey, whence a white line along the centre of the under parts. Inhabits Brazil.

Pl. XVIII. Vol. II.—5. T. Rivolii, Duke of Rivoli's Humming-Bird.—Oiseau-mouche Rivolii, *Less. O. M.* iv. Plumage of a very dark golden-green; the crown with a cowl of very rich blue, separated from the gorget

by a dark line of the general tint of the body; gorget bright emerald-green, spreading upon the side of the neck; tail very ample, nearly square. Inhabits Mexico.

Pl. XXV. Vol. I.—6. T. Cora, the Cora Humming-Bird.—Orthorhynchus Cora, *Less. Zool. de La Coq.* xxxi. fig. 4. Above and on the flanks brilliant-green; gorget of amethystine-red, lower parts pure-white; tail very long, with the centre feathers much exceeding the others. Inhabits the elevated country between Callao and Lima.

Pl. XXI. XXII. Vol. I.—7. T. cornutus, Double-crested Humming-Bird.—*Neuw. Voy. au Brés.* Trochilus bilophus, *Temm.* xviii. Ornismya chrysolopha, *Less. O. M.* vii. Back and shoulders golden-green; forehead and gorget, the latter finishing in a point, bright bluish-purple, inclining more to blue on the forehead, above the eyes two crests of brilliant golden-orange; under parts pure white; tail very long, feathers nearly equally graduated. Female wants the crest. Inhabits the exalted Campos-Geraes at the sources of the river Don Francisco.

8. T. auritus, Violet-eared Humming-Bird. — *Vieill. Ois. Dor.* 25. and 26. Violet-eared Humming-Bird, *Lath.* L'Oiseaux-mouche à oreilles d'azur, *Less. O. M.* x. and xi. Above brilliant green, beneath pure white, vent greenish; behind the ears a tuft of round violet-coloured feathers, somewhat elongated; a line from the rictus beneath the eyes black; tail wedge-shaped, the four centre feathers blackish-green, the others white. Female without the tufts, under parts tinged with grey. Inhabits Guiana and Brazil.

Pl. XIII. Vol. I. Pl. XV. Vol. II.—9. T. petasophorus, Violet-tufted Humming-Bird.—*Neuw. Temm. Pl. Color.* cciii. fig. 3. Oiseaux-mouche petasophore, *Less. O. M.* xiii. and lix. Plumage bright-green, palest on the vent; under tail-coverts pure white; throat with scaly-formed steel-blue feathers; elongated tuft behind the ears rich violet, changing from nearly orange-red to blue; tail even. Female bril-

liant emerald-green; vent and under tail-coverts white; a white stripe from the rictus below the eyes. Inhabits Brazil.

Pl. XIV. Vol. I.—10. T. scutatus, Natterer's Humming-Bird.—Oiseau-mouche écussonné, *Temm. Pl. Col.* ccxcix. fig. 3. Le Natterer, *Less. O. M.* xvi. and lxi. Above golden-green; front and gorget bright emerald-green; two ample tufts springing from below each eye of a deep indigo-blue, tipped with dull-yellow; breast and belly indigo-blue; flanks greenish; vent and under tail-coverts white; tail square. Inhabits Brazil.

Pl. X. Vol. I. Pl. VII. Vol. II.—11. T. Delalandii, Delalande's Humming-Bird.—*Vieill, Dict. d'Hist. Nat.* —*Temm. Pl. Col.* xviii. Le Plumet bleu, *Less. O. M.* xxiii. xxiv. Above golden-green; behind the eye a white stripe; forehead and crown brilliant emerald-green, continued by a pointed crest of rich indigo-blue, the longest feather narrow and tipped with white; under parts deep indigo-blue; vent and under tail-coverts grey. Female wants the crest; grey beneath; tail banded with deep indigo-blue, tipped with white. Inhabits Brazil.

Pl. VI. Vol. II.—12. T. Loddigesii, Loddiges's Humming-Bird.—L'Oiseau-mouche Loddige, *Less. Troch.* li. Above golden-green, under parts pale grey, marked in the centre of the breast and belly with a velvety patch of deep black; crown and elongated crest entirely of a rich violet-blue; tail graduated, steel-blue, white at the tip. Inhabits Brazil.

The two last form the genus *Cephalepis* of Loddige.

Pl. XII. Vol. I.—13. T. sephanoides, Violet-crowned Humming-Bird.—Orthorhynchus sephanoides, *Less. et Garn. Zool. de la Coq.* xxxi. Above, golden-green; underneath, yellowish-white, feathers spotted with grey; crown with a rounded crest, rich reddish violet. Inhabits Chili, Talcaguana.

Pl. V. Vol. II.—14. T. Stokesii, Stoke's Humming-Bird. —*King, Proceed. Zool. Soc. Lond.* Le Stokes, *Less. Troch.* l. Back and rump brilliant emerald-green,

feathers broad and scale-formed; under parts pure white, each plume with an emerald-green spot, surrounded by a darker shade; auriculars blackish-brown, spotted with violet; crest very ample, rounded, brilliant blue; tail broad, centre feathers green, others white on the inner webs. Inhabits the island of Juan Fernandez.

T. sephanoides and *Stokesii* are closely allied to the two preceding.

15. T. CRISTATUS, Crested Humming-Bird. — *Edw.* 37. Oiseau mouche Huppé, *Less. O. M.* xxxi. xxxii. Plumage golden-green; an elongated crest of emerald-green, with blue reflections. Female without the crest, beneath grey. Inhabits islands of Trinité and Martinique.

Oiseau mouche à Huppe blue, Vieil. *Ois. Dor.*, seems a variety; body entirely brown, crest deep blue.

PL. XI. VOL. I.—16. T. MOSCHITUS, Ruby-crested Humming-Bird.—*Edw. Lath.* Le rubis topaz, *Less. O. M.* lii. liii. liv.? Above, belly and vent, of a dull golden-brown, in some specimens very deeply coloured; crown of a brilliant ruby red; gorget, occupying the whole breast, topaz-yellow; tail chestnut, tipped with black, very ample. Female without the crest and gorget. Inhabits West India Islands.

Lesson figures the female green above, grey beneath, tail chestnut at the base, barred with green and white tips.

PL. XV. XVI. VOL. I.—17. T. ORNATUS, The Tufted-necked Humming-Bird.—Le Huppé-col, *Buff.* 640. Tufted-necked Humming-Bird, *Lath. Gen. Hist.* xv. 318. Ornismya ornata, *Less. O. M.* xli. Upper parts, belly, and vent, golden-green; rump with a white band; front, and gorget occupying the whole of the throat and breast, emerald-green; crest of pointed feathers, chestnut-red; sides of the neck with long narrow feathers, chestnut-red, tipped with a round spot of emerald-green; tail chestnut-red, centre feathers green. Female wants the crest and neck tufts; gorget chestnut; tail chestnut, barred in the centre with green. Inhabits Cayenne, Guiana, Brazil.

PL. XVII. VOL. I.—18. T. AUDENETII, Audenet's Humming-

Bird.—L'Oiseau-mouche Audenet, *Less. Supp.* ii. Above golden-green: rump with a dark band, relieved on each side with white; gorget occupying the throat, emerald-green; feathers of the breast, belly and vent greyish-brown at the base, yellowish-white at the top, neck with tufts; the feathers narrow, emerald-green, tipped with white. Inhabits Peru.

Pl. XVIII. Vol. I.—19. T. CHALYBEUS, Vieillot's Humming-Bird.—*Temm. Pl. Col.* lx. Oiseau-mouche Vieillot, *Less. O. M.* lxiv. Above golden-green; rump crossed by a yellowish band; front and gorget emerald-green: under parts white, dashed with green on the flanks; tail chestnut; neck with lengthened tufts, feathers narrow, emerald-green, each with a white spot at the end. Female is grey below, and wants the neck-tufts; tail of a brownish-purple, tipped with reddish-brown. Inhabits Brazil.

Pl. XII. Vol. II.—20. T. GOULDII, Gould's Humming-Bird.—Oiseau-mouche de Gould, *Less. Troch.* xxxvi. Upper parts golden-green; front, and gorget occupying the breast, brilliant emerald-green; crown with a crest of lengthened feathers, chestnut-red; belly and vent deep greenish-black; neck with lengthened tufts, feathers narrow, pure white, a round spot of brilliant green at the tip of each. Inhabits ——.

Pl. XIX. XX. Vol. I.—11. T. MAGNIFICUS, Magnificent Humming-Bird.—*Vieil. Dict. des. Scien. Nat.*—*Temm. Pl. Col.* 299. fig. 2. La Hausse-col blanc, *Less. O. M.* xlii. xlii. Golden-green above, beneath of a duller shade of the same colour; front and gorget emerald-green; crown with a double chestnut crest of long pointed feathers, sides of the neck with tufts closing round the lower part of the gorget; the feathers broad and rounded, pure white, with a narrow black bar at the tip of each. Female without the crest or neck-tufts; gorget chestnut-red, lower part grey. Young entirely greyish-white below. Inhabits Brazil.

The last five species form the genus *Lophornis* of Lesson, in which he also includes *T. petasophorus* and the *Cephalepis* of Loddiges.

Pl. IX. Vol. II.—22. T. RUFUS, Ruff-necked or Nootka Humming-Bird.—*Gmel.* Ruff-necked Humming-Bird, *Lath.* Selasphorus rufus, Nootka Humming-Bird, *Swain. N. Zool.* Above clear reddish-brown, with green reflections; crown bright emerald-green, the feathers scaly; shoulders of same colour; gorget, extending upon the neck in narrow points, brilliant fiery red; under parts white, reddish on the flanks; tail wedge-shaped. Inhabits California, and the north-west coast of America.

This species is the type of Mr Swainson's genus *Selasphorus*, in which he also includes the five preceding birds.

Pl. VI. Vol. I.—22. C. ANNA, Duchess of Rivoli's Humming-Bird. — Oiseau-mouche Anna, *Less. O. M.* lxxiv. Crown and gorget rich amethystine-red, gorget spreading upon the sides of the neck; upper parts golden-green, under parts greyish white, shaded with pink; tail brown with metallic lustre, slightly forked. Inhabits California.

Pl. VIII. Vol. I.—23. T. PRASINA, Golden-green Humming-Bird.—T. viridissimus, *Lath.* ? L'Orvert, *Less. O. M.* lxv. Entirely of a rich golden-green, brightest on the forehead and breast; tail blackish-blue. Inhabits Brazil.

The varieties of Latham with white under parts, may probably be the young and females.

Pl. VII. Vol. I.—24. T. ? CYANEUS, Blue and green Humming-Bird.—*Vieill.* Oiseau-mouche verazur, *Less.* lxi. Upper parts, tail and flanks green; the front, breast and belly blue; the gorget white, feathers dark at the base. Inhabits Brazil.

25. T. ALBIVENTRIS, White-bellied Humming-Bird.—Oiseau-mouche à ventre blanc, *Less.* Troch. xxii. Above golden-green; throat and breast shaded off upon the flanks emerald-green; belly, vent, and lower tail-coverts, pure white; tail above brownish-green, beneath steel-blue, graduated. Inhabits

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26. T. VIRIDIS.—*Vieil. Ois. Dor.* Oiseau-mouche à queue vert et blanche, *Less, O. M.* xl. Golden-green above;

throat and breast brilliant yellowish-green, with a silvery lustre; tail wedge-shaped, green at the base, gradually shading into pure white. Inhabits the island of Trinite.

27. T. TEPHROCEPHALUS?—*Less. O. M.* lx. Crown grey; upper parts, throat, and breast, green; belly and vent greyish-white; tail blackish-green, the outer feathers tipped with white. Inhabits Brazil.

Described from Lesson apparently in immature plumage.

28. T. ALBICOLLIS?—*Less. O. M.* lxiii. Entirely green, except a patch on the breast and vent white; tail steel-blue, all the feathers, except those in the centre, tipped with white. Inhabits Brazil.

29. T. VIRIDISSIMA?—*Vieill. Ois. Dor*, 42. *Less. O. M.* lxxv. Upper parts golden-green; throat and breast green mixed with white; belly and vent greyish. Inhabits Brazil.

Numbers 27. and 28. are described from Lesson.

PL. II. VOL. I.—30. T. AVOCETTA, Avocet-billed Humming-Bird.—L'Oiseau-mouche avocette, *Less. O. M.* xxiv. Golden-green above; throat green, forming a gorget; belly dull black; a line of white along each side of the body; tail steel-blue, square. Inhabits Guiana.

PL. III. VOL. I.—31. T. RECURVIROSTRIS, Recurved-billed Humming-Bird.—*Swain. Zool. Illust.* 1st series, cv. Oiseau-mouche à bec recourbé, *Less. O. M.* xxxvii. Plumage brilliant green; the throat with a gorget of emerald green, occupying the breast: centre of the belly with a dark streak; tail chestnut. Young with the belly and vent white; bill serrated. Inhabits Guiana.

We have placed these two birds last in the Sub-family Trochilus; from the curious form of the bill they will not answer any of the general characters. Lesson makes a separate race "*Les avocettes*," founded upon the turned up bill.

II. Sub-Fam. CYNANTHUS. Bill straight, or very slightly curved. Tail very long, forked.

Pl. V. Vol. I.—1. C. colubris, Northern Humming-Bird.—The Red-throated Humming-Bird, *Edw.* Humming-Bird, *Wilson's N. A. Ornith.* Northern Humming-Bird, *N. Zool.* Above, brilliant green; beneath, white, greenish upon the flanks; throat with a ruby gorget, varying with the light to brilliant red. Inhabits N. America.

Pl. XIV. Vol. II.—2. C. lucifer, Blue-throated Humming-Bird.—Cynanthus lucifer, *Swains.* Ornismya cyanopogon, *Less. Col.* ix. Above brilliant green; beneath white; flanks dashed with yellowish; throat with a gorget of violet feathers, which can be raised and expanded at pleasure. Inhabits Mexico.

Pl. IX. Vol. II.—3. C. amethystinus, Amethystine Humming-Bird.—*Linn.*, *Lath.* Ornismya amethystina, *Less. Col.* xlvii. Above golden-green; beneath greyish-white; throat with a violet gorget, succeeded on the breast with a pure white band; tail deeply forked. Inhabits Guiana.

4. C. amethystoides, Little Amethystine Humming-Bird.—Le petit Amethyste, Ornismya amethystoides, *Less. Col.* xxv., xxvi., xxvii. Length only 2½ inches; upper parts golden-green; under parts greyish; gorget amethystine-red, succeeded by a collar of grey. Inhabits ———

Distinguished from the last by its less size and the colour of the gorget. In the female and young of both the tail is rounded.

Pl. VIII. Vol. II.—5. C? orthura, Even-tailed Amethystine Humming-Bird.—L'Amethystoide à queue égale, *Less. Troch.* xviii. & xxix. Above, golden-green;

throat and breast with an amethystine gorget, succeeded by a band of white; lower parts cinnamon-red; tail equal, golden-green, black at the tips, except the two outside feathers, which are tipped with white. Inhabits Brazil.

We have placed this provisionally in Cynanthus; the bird seems only well known in its young state, when the tail is square. It is introduced upon the authority of Lesson.

Pl. XXIX. Vol. I.—6. C. LEUCOTIS, White-eared Humming-Bird.—Trochilus leucotis, *Vieill.* Oiseau-mouche Arsenne, *Less. O. M.* ix. Front, cheeks and throat azure-blue; crown brown, shading into golden-green on the upper parts; a very marked white streak from the eye above the auriculars; gorget bright emerald-green; belly and vent greyish-green; under tail-coverts pure white. Inhabits Brazil.

Pl. XXIV. Vol. I.—7. C. VESPER, The Evening Humming-Bird.—Oiseau-mouche vesper, Ornismya vesper, *Less. Col.* xix. vi. Golden-green above, beneath white; gorget rich violet. Inhabits Chili.

Pl. XIII. Vol. II.—8. C? TRICOLOR, Tri-coloured Humming-Bird.—Le Tricolore, *Less. Troch.* pl. xiv. Above golden-green; throat with a gorget of bright carmine; feathers rounded and capable of expanding; under parts pure white, greenish upon the flanks; tail slightly graduated, centre feathers golden green, others steel-blue, margined with chestnut. Inhabits Mexico.

Swainson appears to make the form of the tail a principal character in his division Cynanthus. We have introduced T. tricolor, therefore, with a mark of doubt, from the difference in form. In other respects it is closely allied.

9. C. PLATURUS, Racket-tailed Humming-Bird.—*Lath. Gen. Hist.* iv. p. 388. Oiseau-mouche à raquettes, *Less. Col.* xxxi. Above dull green; gorget and breast bright emerald-green; tips of the prolonged feathers nearly round; tarsi unplumed. Inhabits Guiana.

Pl. XXII. Vol. II.—10. C. UNDERWOODII, Rough-legged Racket-tailed Humming-Bird.—*Less. Trooh.* xxxii. Above dull green, a white band across the rump; gor-

get and breast bright emerald-green; tips of the prolonged feathers oblong: tarsi thickly plumed with hair-like feathers. Inhabits ——

The two last forms Lesson's genus *Platurus*.

Pl. XXVII. Vol. I.—10. C. ENICURUS, Half-tailed Humming-Bird.—*Vieill. Nouv. Dict. d. Hist. Nat.* Oiseau-mouche à queue singulière, *Temm.*—*Less. O. M.* xv. Above bright green; gorget violet, succeeded by bands of white and yellow; belly and vent green; tail of six feathers. Inhabits Brazil, Island of Trinite.

Pl. XXVI. Vol. I.—11. C. DUPONTII, Dupont's Humming-Bird.—L'Oiseau-mouche Zemes, Ornismya Dupontii, *Less. Supp.* pl. i. Above golden-green, the gorget rich blue with violet reflections, succeeded by a band of white, whence the under parts are grey; tail deeply forked, the outer feathers narrowing and again expanding at the tips, as in C. platurus, but never leaving the shaft bare; all are tipped with pure white. Inhabits Mexico.

12. C. CONIVETTII, Conivet's Humming-Bird.—L'Oiseau-mouche parvule, Ornismya Conivetii, *Less. Supp.* xxxvii.—Above golden-green, beneath dark emerald-green; tail deeply forked; feathers broad, brownish-black, tipped with grey; base of the upper mandible orange-yellow. Inhabits Brazil.

Pl. XXI. Vol. II.—13. C. POLYTMUS, Black-Capped Humming-Bird.—*Edw.*, *Lath.* Ornismya cephalatra, *Less. Col.* xvii. Crown black, the feathers loose and lengthened; upper parts, belly, and vent, rich golden-green; gorget, covering the whole of the throat and fore part of the neck, bright emerald-green; outer tail-feathers much lengthened. Female with the under parts white; wants the long feathers of the tail. Inhabits Guiana and Jamaica.

14. C? JUGULARIS, Red-breasted Humming-Bird.—T. jugularis, *Linn.*? Red-breasted Humming-Bird, *Edw.* Above and below of a deep velvetty black, with violet reflections; gorget extending upon the breast carmine; tail steel-blue, rounded. Inhabits Guiana.

Pl. X. Vol. II.—15. C. Langsdorffii, Langsdorff's Humming-Bird.—*Temm. Pl. Col.* 66. Le Langsdorff, *Less. Col.* xvi. and xxvi. Above bright green, crossed by a narrow white band on the rump; gorget bright green, succeeded by bands of yellow and reddish-orange; vent and six centre tail-feathers deep blue; tail deeply forked, exterior feathers acuminated. Inhabits Brazil.

16. C. Keinerii, Keiner's Humming-Bird. *Less. Troch.* lxv. Above golden green; throat, neck, and breast, pure white, the two latter with round emerald-green spots; belly and vent blackish-grey, under tail-coverts chestnut; tail lengthened, slightly forked, brownish-grey, darker at the end, outer feathers tipped with white. Inhabits Brazil.

Known only from the figure of Lesson, which was taken from a female in possession of M. Prevost of Paris. The tail of the male most probably is deeply forked.

Pl. XXIII. Vol. II.—17. C. sparganurus, Bar-tailed Humming-Bird.—*Shaw's Gen. Zool.* viii. p. 291. Ornismya sapho, *Less. O. M.* xxvii. xxviii. Above golden-green; gorget covers the throat, breast, and belly; tail with the plumes very broad, deeply forked, golden reddish-orange, each feather tipped with black, giving a barred appearance when the tail is closed. Female, above brownish, beneath grey; tail ample, forked, but half the length of that of the male, brownish-red; outer web of outside feathers yellowish-white. Inhabits interior of Brazil.

18. C. Nuna, The Nuna Humming-Bird.—La Nouna-Kaoli, *Less. Col.* xxxv. Above, bright golden green; beneath white, plumes with a round spot of emerald-green at the tip of each; tail deeply forked, feathers broad, steel-blue at the base, green at the tips, outer edged with white. Inhabits Peru.

19. C. rubineus, Ruby-throated Humming-Bird.—*Linn.*, *Lath.* Oiseau mouche rubis, *Less. Col.* xliv., xlv. and xlvi. Plumage of a deep uniform golden-green, brighter on the breast; gorget of a rich ruby tint, with golden reflections; tail cinnamon-red, with

a narrow black bar at the tip, very slightly forked. Female reddish-grey beneath, a white spot behind the eye. Young nearly similar. Inhabits Brazils.

Pl. XXVIII. Vol. I.—20. T. SAPHURINUS, Sapphire-throated Humming-Bird.—*Lath.* iv. 326. Oiseau-mouche Sapphire, *Less. Orn.* lv. lvi. lviii. Plumage above the belly and vent green; throat chestnut; neck and forepart of the breast rich saphire-blue; under tail-coverts and tail chestnut-red. Female wanting the chestnut on the throat, and having the blue reaching entirely over the neck; belly and vent white; tail brownish. Inhabits Guiana, Brazil, the Island of Berbice.

Pl. XVI. Vol. II.—21. C. WAGLERII, Wagler's Humming-Bird.—Le Wagler, *Less. Col.* lxxiii. Plumage entirely of a deep emerald-green, having very brilliant blue reflections. Wings tinged with blue; tail slightly forked. Inhabits Brazil.

22. C. BICOLOR, Saphire and Emerald Humming-Bird.—*Lath. Gen. Hist.* iv. 329. Crown and back of the neck deep greenish-brown; back and remaining upper parts, sides, belly, and vent, rich green; throat and neck shading into the green of the breast, brilliant blue; tail steel-blue. Female has the under parts pure white. Inhabits French Guiana, Guadaloupe.

23. C? CŒRULEUS, Audebert's Humming-Bird.—T. cœruleus, *Ois. dor.* iv. Oiseau-mouche Audebert, *Less. O. M.* iv. Golden green above; throat blue; neck and under parts emerald-green; vent white; tail steel-blue, square. Inhabits Guiana.

24. C. GLAUCOPIS, Blue-fronted Humming-Bird.—*Gmel.* Trochilus frontalis, *Lath.* iv. p. 352. Oiseau-mouche glaucope, *Less. Col.* lviii. lix. Forehead and crown deep blue with violet reflections. Above dull green, in some specimens blackish-green; gorget running upon the breast and upper part of the belly, rich emerald-green; vent greyish-white. Female without the blue on the head; lower parts grey. Inhabits Brazil.

Pl. XXIII. Vol. I.—25. C. furcatus, Violet Fork-tailed Humming-Bird. — L'Oiseau-mouche à queue fourchuè, *Buff.* Trochilus furcatus, *Gmel. Less.* xviii. Plumage of a deep violet-black, with lighter reflections; gorget, reaching to the upper part of the breast, bright emerald-green; tail ample, deeply forked. Inhabits Brazil, Guiana, Jamaica.

26. C. erythronotus, Crimson-Rumped Humming-Bird.—L'Erythronote, *Less. Col.* xi. Head, breast, and belly, bright emerald-green; lower part of the back, rump and upper tail-coverts, crimson-red; tail forked, of an indigo-blue on both sides. Inhabits Brazil.

27. C. Maugerii, The Ourissa. — Trochilus Maugerii, *Vieill.* Oiseau-mouche Mauge, *Less. O. M.* lxvii. lxix. Deep blackish-green above, the reflections brilliant; forehead and throat emerald-green; breast banded with rich blue: vent greyish; tail deeply forked, steel-blue. Female of duller plumage; lower parts grey; tail nearly square, centre feathers green, tipped with white, others nearly brown. Inhabits Porto Rico.

28. C. cyanogenys, Neuwied's Humming-Bird.—Oiseau-mouche Wied, *Less. O. M. Supp.* xxvi. Above golden-green; chin blue; breast and belly emerald-green; vent white; tail square, deep and bright steel-blue. Inhabits Brazil.

29. C. Atala, The Atala.—L'Atala, *Less. Troch.* xlii. Plumage of the head and body clear emerald-green, the vent and under tail-coverts white; tail square, of a deep and bright steel-blue. Inhabits Brazil.

The two last are very closely allied, the distinctions will be seen in the characters given to the lower parts; they vary from the character in the square form of the tail.

Pl. I. II. Vol. II.—30. C. thalassinus, Blue-bellied Saw-billed Humming-Bird.—T. thalassinus, *Phil. Mag.* L'Anais, *Less. Troch.* lv. lvi. lvii.; *Sup.* iii. General colour emerald-green, with golden and steel-blue reflections; gorget extends upon the side of the neck

in tufts; tail rounded, with a deep steel-blue band; bill serrated. Inhabits the table land of Mexico.

Placed by Lesson in *Ramphodon*; but with which we do not consider it allied.

Pl. III. Vol. II.—31. C. GIGAS, Gigantic Humming-Bird.—Oiseau-mouche Geant, *Vieill. Gall.* pl. 180.—O. mouche Patagon. *Less.* o. m. iii. Above brownish-green; under parts light red, shaded with green on the flanks; tail very ample, forked. Inhabits Chili.

The largest species known, it has the dull colouring of Phæthornis.

32. C. LEUCOGASTER.—Ornismya albiventris, *Less. Col.* lxxiii. Above, golden-green; throat and breast white, the latter shaded into pale green; forehead and cheeks of a deeper shade than the upper parts; tail brown, very slightly forked. Inhabits Guiana.

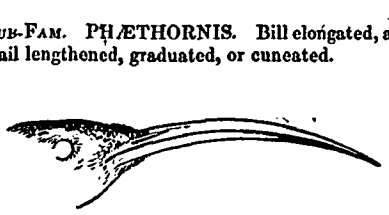
33. C. ARSINOE, Arsinoë Humming-Bird.—L'Arsinal, *Less. O. M. Supp.* xxviii. Above golden-green; front and under parts emerald-green; secondaries and wings bright reddish-chestnut; tail purplish-brown, very slightly forked. Inhabits Mexico.

34. C. ŒNONE, Œnone Humming-Bird.—L'Œnone, *Less. O. M. Supp.* xxx. Head, neck, and throat rich blue; back, breast, belly and shoulders golden-green; rump and tail brilliant orange; tail considerably forked. Inhabits Trinité.

35. C.? MACRCURUS, Swallow-tailed Humming-Bird.—Trochilus macrourus, *Gmel.* F. forficatus, *Lath.* Ornismya hirundinacea, *Less.* Plumage of a bluish-black, with steel-blue reflections; tail indigo-blue, very deeply forked; shafts of the quills broad, as in Campylopterus.

Placed by Lesson in a division named "Campylopteres Hirundelles."

III. Sub-Fam. PHÆTHORNIS. Bill elongated, arched. Tail lengthened, graduated, or cuneated.



Centre tail-feathers of the male very long.

Pls. XXVI. & XXVII. Vol. II.—1. P. SUPERCILIOSUS, Supercilious Humming-Bird.—*Lath.* Le Brin blanc. *Buff.* Le Colibri brin blanc, *Less. Col.* vi. and vii. Above, of a bronzed green gold; a reddish-white line above, another beneath the eye; lower parts brownish-white; tail brown, beneath tipped with white. Female with a white stripe beneath the eye; tail chestnut, barred with black, tipped with white, the centre feather only green. Inhabits Guiana, Brazil.

Pl. XXVIII. Vol. II.—2. P. EURYNOMUS, Scaly Backed Humming-Bird.—Le Colibri Eurynome, *Less. Col.* xxxi. Feathers of the back golden-green, fringed with reddish; of the head deep green edged with rufous; of the throat brown, edged with yellowish-white; lower parts grey; tail black at the base, tips white, centre feathers green for the length of the others. Inhabits Brazil.

3. P. GUY, Guy's Humming-Bird.—Le Guy, *Less. Troch.* xliv. Above brilliant green; beneath grey, with the throat, vent and stripe through the eye and under the auriculars ochreous-yellow; under mandible reddish-orange. Inhabits ——

4. P. INTERMEDIUS, Intermediate Humming-Bird.—Le Colibri intermediaire, *Less. Troch.* xix. Head, neck, vent, wings, and tail, brown; rump, belly, and vent, reddish-orange; auriculars black, with a rufous stripe above and below; centre tail-feathers surpass the tip about half an inch. Inhabits Brazil.

5. P. BOURCIERII, Bourcier's Humming-Bird.—Le Colibri

faux brins blancs, *Less.* xviii. Tint of the upper parts reddish-green, each feather being fringed with rufous: throat white, remaining under parts reddish-white; tail blackish-green, tips of the outer feathers reddish, centre feathers extend two inches, white for half an inch at the tip. Inhabits Brazil.

6. P. SQUALIDUS, Brown Brazilian Humming-Bird.—Colibri terné, *Temm. Pl. Col.* cxx. Colibri à vestiture ternè, *Less. Troch.* viii. Above golden-green; beneath grey; stripe above and below the eye very conspicuous; tail deep brown, each feather tipped with white. Inhabits Brazil.

7. P. LONGUEMAREUS, Longuemare's Humming-Bird.—Le Colibri Longuemare, *Less. Troch.* ii. and lxii. Crown deep brown; back and sides of the neck brownish-red, tinged with green; below reddish-yellow; tail brown, centre feathers tipped with white, and almost regularly graduated. Inhabits Cayenne.

PL. IV. VOL. I.—8. P. RUFIGASTER, Red-bellied Humming-Bird.—Colibri à ventre rousâtre, *Temm. Pl. Col.* cxx.; *Less. Troch.* ix. Crown grey, superciliary streak pure white; upper parts chestnut-red; lower parts of a paler shade of the same colour, nearly white at the chin; tail brown, tipped with reddish-white. Inhabits Brazil.

9. P. DAVIDIANUS, David's Humming-Bird.—Le Colibri David, *Less. Troch.* xiii. Deep brown above; beneath of a paler shade; auriculars form a dark patch on the cheek; centre tail-feathers not far surpassing the others; form more slender than the last. Inhabits Cayenne.

In the following birds, the tail is regularly graduated, as in the female of the preceding species. No. 7. may naturally lead to T. hirsutus, &c. by its lengthened but nearly graduated form.

PL. XXIX. VOL. II.—10. P. HIRSUTUS, Hairy-legged Humming-Bird.—Trochilus hirsutus, *Linn.* Golden-green above, beneath bright chestnut-red; tail chestnut-red, barred with black at the end, and tipped with white. Inhabits Brazil.

11. P. MAZEPPA, Mazeppa Humming-Bird.—Colibri Mazeppa, *Less.* Troch. iii. Above golden-green, beneath pale chestnut; tail uniform chestnut, barred with black at the tip, centre feathers golden-green. Inhabits French Guiana.

PL. XXX.. VOL. II.—12. P. SWAINSONII, Swainson's Humming-Bird. Colibri Swainson, *Less. Uroch.* lxvi. Golden-green above; beneath, chestnut-red; tail even, chestnut, barred with black and tipped with white. Inhabits Brazil.

13. P. LEUCURUS, White-tailed Humming-Bird.—*Lath.* Trochilus leucurus, *Less. O. M.* xx. Above golden-green; throat with a patch of chestnut; breast golden-green; belly and vent grey; tail white, except the centre feathers which are green. Inhabits Dutch Guiana, Surinam.

14. P.? SIMPLEX.—Colibri simple, *Less. Col.* xxiii. Golden-green above, beneath chestnut; the throat indistinctly in the form of a gorget, purplish; vent white; tail nearly equal, but rather hollowed in the centre, black, outer feathers tipped with white.

This seems to be a bird in immature plumage, and more allied to Cynanthus. Trochilus multicolor, we have every reason to think, is a made-up specimen, but would stand here.

15. P.? CHRYSURUS, Yellow-tailed Humming-Bird.—Oiseau-mouche chrysure, Ornismya chrysura, *Less. O. M. supp.* iv. Uniform golden-green; tail reddish-yellow, deeper at the tip, rounded. Inhabits Brazil.

16. P.? AMAZILI.—Orthorhynchus amazili, *Less. Zool. de la Coq.* xxxi. Crown, throat and breast, emerald-green; upper parts golden-green; vent roddish-yellow; tail bright chestnut, nearly square. Inhabits Peru.

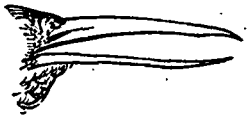
The last bird is described as new in Lesson's Zoologie de la Coquile, and, with the preceding one, is introduced here in doubt. They shew a strong alliance to both this form and Cynanthus.

PL. I. VOL. I.—17. P. NÆVIUS, Spotted Saw-billed Humming-Bird.—Colibri tacheté, *Temm.* Ramphodon

maculatum, *Less. O. M.* i. Above golden green, a white stripe over each eye; auriculars chestnut; throat, breast, and belly, grey, spotted longitudinally with brown; central feathers brownish-green, tipped with pale chestnut, the pale tips occupying more of the feathers towards the outside; bill straight, serrated. Inhabits mountains of Corevado, in the vicinity of Rio de Janeiro.

This forms the genus *Ramphodon* of Lesson, including *T. petasophorus* and *anais*,—*Heliotryx* of Boié.

IV. Sub-Fam. CAMPYLOPTERUS. Bill rather long and slightly curved. Wings falcated, the shafts or scapes of the primary quills dilated and compressed. Tail rounded, or graduated.



Pl. XXXIV. Vol. I.—1. C. latipennis, The Blue-throated Humming-Bird. — Trochilus latipennis, *Lath. Swains. Zool. Illust.* Oiseau-mouche latipenne, Ornismya latipennis, *Less. Troch.* 46. Body golden-green; gorget brilliant blue; tail with the four outside feathers half white. Female, beneath grey, without the gorget. Inhabits Guiana. Tobago.

1. C. pampa, The Pampa Sabre-wing. — Campylopterus pampa, *Less. supp.* xv. Crown in a line above the eye azure-blue; upper part of the body green, under parts pale grey; tail wedge-shaped, green, outer feathers, dark at the tips. Inhabits Paraguay.

3. C. falcatus, Blue-bellied Sabre-wing.—Sickle-winged Humming-Bird, *Swain. Zool. Illust.* Oiseau-mouche à remiges en faucilles, *Less. O. M.* xxxvi. Upper parts, flanks and vent golden-green; throat, breast

and belly deep-blue; tail even, chestnut-red, tips black. Inhabits Brazil.

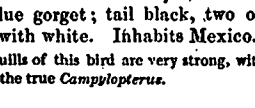
4. C. CIRROCHLORIS, Grey-and-green Sabre-wing.—Trochilus cirrochloris, *Vieill. Dict. des Scien. Nat.* Oiseau-mouche modeste, Ornismya simplex, *Less. O. M.* xxxiii. Above, of a dull green, tinged with brown; beneath, grey, whitish on the vent. Inhabits Santa-Paulo, Brazil.

Allied to the female of *C. latipennis*. Perhaps a female, the male of which is unknown.

5. C.? CLEMENTIÆ.—Oiseau-mouche Clemence, *Less. O. M.* xxx. Above brownish-green, clearest on the centre of the back; lower parts of a paler tint; a white streak behind the eye; throat occupied by a deep blue gorget; tail black, two outside feathers tipped with white. Inhabits Mexico.

The quills of this bird are very strong, without being broad, like the true *Campylopterus*.

V. SUB-FAM. LAMPORNIS. Bill arched. Tail short, nearly even, (rounded, or slightly forked).



PL. XX. VOL. II.—1. L. MANGO, The Mango Humming Bird.—Trochilus mango, *Linn. Lath. Less.* xiii xiv. Above, golden-green; beneath, with a ventral stripe of deep black, changing to brilliant blue on the sides; vent with a white band; tail purple-brown, with green reflections. Young, white beneath, with the ventral stripe dull black, Inhabits Jamaica, Tobago,

PL. XXXII. XXXIII. VOL. I.—2. L. GRAMINEUS, Black-breasted Humming-Bird.—Colibri du Mexique, *Buff.*

Black-breasted Humming-Bird, *Lath.* Le Haïtien, *Less. Col.* xii. Above, golden-green; throat with an emerald-green gorget; centre of the breast and belly black; vent with a white band; tail purple-brown, with green reflections. Young, with the under parts white, from the throat dull black, tail tipped with white. Inhabits Guiana, St Domingo.

3. L. VIRIDIS—Colibri cyanure. Trochilus viridis, *Less. Col.* xi. Plumage of the body uniform dull emerald-green; tail deep steel-blue. Inhabits Porto-Rico.

4. L. AURULENTUS, The Aurulent Humming-Bird. Trochilus aurulentus, *Less. Col.* xvi. xvii. xviii. xix. Aurulent Humming-Bird, *Lath.* Above, golden-green; throat with a gorget, topaz-yellow; belly deep black; vent with a white band; tail brownish-purple, with green reflections, in form rather forked. Female and young beneath grey; no gorget, tail rounded, outer feathers tipped with white. Inhabits Porto Rico.

5. L. HOLOSERICEUS, Green Black-bellied Humming-Bird.—Trochilus holosericeus, *Lath.* Green Black-bellied Humming-Bird, *Edw.* xxxvi. Le Caraibe, *Less. Col.* xx. Above, golden-green; gorget emerald-green; breast with a blue transverse band; belly deep brownish-black; tail steel-blue. Inhabits St Thomas, and Porto Rico.

PL. XXIV. XXV. VOL. II.—6. L. PELLA, Topaz-throated Humming-Bird.—*Linn.*, *Shaw*, *Lath.* Le Colibri topaz, *Less. Col.* i. iii. iv. v. Plumage rich brownish-orange, varied with lake-coloured reflections; gorget emerald green, varying to topaz-yellow, surrounded by a shade of black; tail chestnut. Female bright green, the gorget brown. Inhabits Guiana.

PL. XXX. VOL. I.—7. L. MELLIVORUS, White-collared Humming-Bird.—*Edw.* xxxv. *Lath.* Le Jacobine, *Buff. Less. O. M.* xxi. xxii. Head, throat, and gorget deep brilliant blue; the under parts, and a collar round the back, pure white; upper parts and sides green; tail pure white, with a narrow band of white at the tip. Female, above green, beneath greyish-

white, the centre of each feather darkest; tail green at the base, the outer feathers barred with blue and tipped with white. Inhabits Surinam and many of the West Indian islands.

8. L. NIGER, Black Humming-Bird.—*Swainson.* T. lugubris, Le demi-deuil, *Less. O. M.* xxxviii. xxxix. Plumage deep black, tinged with blue on the head, and green on the back and shoulders; vent and tail white, the latter barred at the tip with black. Female, with a brown tinge pervading the plumage; tail black, with the outer web of the outer feather only white. Inhabits Brazil.

9. L. SWAINSONII, Swainson's Humming-Bird.—Le Swainson, *Less. O. M.* lxx. Above, belly and under tail-coverts, golden-green; throat and breast emerald-green, centre of the breast and upper part of the belly with a deep black patch; tail forked, bluish-black, tinged with green above. Inhabits Brazil.

Described from Lesson's plate and description.

PL. XIX. VOL. II.—10. L. BUFFONII, Buffon's Humming-Bird.—Le Colibri Buffon, *Less. Troch.* v. Golden-green, the plumage tinted with reddish on the cheeks and rump; feathers on the head and breast scaly-formed; under tail-coverts white, tail of a uniform steel-blue, slightly forked.

Lesson arranges this bird with *T. superciliosus.* The form of the tail is, however, very different, and the plumage much nearer the division of *Lampornis*, which contains *T. niger*, &c.

PL. IV. VOL. II.—11. L. CŒLIGENA, The Purple Humming-Bird.—La Cœligene, *Less. Troch.* liii. Above, purple, with green and violet reflections; beneath, grey, the feathers of the throat and neck with a dark centre. The tail ample, slightly forked. Inhabits Mexico.

These form Lesson's Race *Les Caraïbes*,—the genus *Anthracothorax*, Boié.

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Government of Maharashtra
on 26 March, 2016